VIDE-V29358

SLV-SE220/SE420/SE620/SE720/SE727/SE820/SX720/SX727

RMT-V405/V405A/V406/V406A/V406B/V407A/V407B/V407C

SERVICE MANUAL

AEP Model
SLV-SE220/SE620/SE720/SE727/SE820/SX720/SX727

UK Model
SLV-SE220G/SE720G/SE820

Russian Model
SLV-SE420K/SE620N/SE720N/SE820N/SX720N

VHS
PAL

Hi-Fi

SHOWVIEW®

VCR plus+ (for UK model)

Photo : SLV-SE620D
RMT-V406

TS-10 MECHANISM

Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT MANUAL VII for MECHANICAL ADJUSTMENTS. (9-921-790-11)

The abbreviations of SLV-SE220/SE420/SE620/SE720/SE727/SE820/SX720/SX727 contained in this service manual are indicated when these models are common to all their corresponding models as given below.

Abbreviated models name	SE220	SE420	SE620	SE720	SE727	SE820	SX720	SX727
AEP models SLV-	SE220B SE220D SE220I	–	SE620B SE620D SE620E	SE720B SE720D SE720E SE720I	SE727E	SE820B SE820D SE820E	SX720D SX720E	SX727D
UK models SLV-	SE220G	–	–	SE720G	–	SE820G	–	–
Russian models SLV-	–	SE420K	SE620N	SE720N	–	SE820N	SX720N	–

The SLV-SE220D/SE620D/SE720D/SX720D/SX727D/SE820D model and SLV-SE420K/SE620N/SE720N/SX720N/SE820N model that have destination of Germany, Hungary and Austria are repaired only at the centralized service centers. Send these model to the centralized service centers for repair.

SPECIFICATIONS

System

Channel coverage
PAL (B/G, D/K)
VHF E2–E12, R1–R12
UHF E21–E69, R21–R69
CATV S1–S41, S01–S05

RF output signal
UHF channels 21–69

Aerial out
75-ohm asymmetrical aerial socket

Tape speed
SP: PAL/MESECAM* 23.39 mm/s (recording/playback)
NTSC 33.35 mm/s (playback only)
LP: PAL/MESECAM* 11.70 mm/s (recording/playback)
NTSC 16.67 mm/s (playback only)
EP: NTSC 11.12 mm/s (playback only)
*MESECAM: for B model

Maximum recording/playback time
10 hrs. in LP mode (with E300 tape)

Rewind time
Approx. 1 min. (with E180 tape)

Inputs and outputs

LINE-1 (EURO AV)
21-pin
Video input: pin 20
Audio input: pins 2 and 6
Video output: pin 19
Audio output: pins 1 and 3

— Continued on next page —

VIDEO CASSETTE RECORDER

SONY®

LINE-2 (DEC/EXT)/LINE-3 (DEC/EXT)*1
21-pin
Video input: pin 20
Audio input: pins 2 and 6

⊸ LINE-2 L ⊸ R*2
VIDEO IN, phono jack (1)
Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
AUDIO IN, phono jack (2)
Input level: 327 mVrms
Input impedance: more than 47 kilohms

AUDIO (OUT/SORTIE) R/D L/G*3
Phono jack (2)
Rated output level: 327 mVrms
Load impedance: 47 kilohms
Output impedance: less than 10 kilohms

*1 not available on SLV-SE620N
*2 SLV-SE820N only
*3 not available on SLV-SE620N and SE420K

General

Power requirements
220 – 240 V AC, 50 Hz

Power consumption
15 W (SLV-SE420K)
17 W (SLV-SE820N, SE720N, SX720N and SE620N)
3 W (POWER SAVE is set to ON, minimum)

Operating temperature
5°C to 40°C

Storage temperature
–20°C to 60°C

Dimensions including projecting parts and controls (w/h/d)
Approx. 360 × 95 × 243 mm (SLV-SE420K)
Approx. 430 × 96 × 242 mm (SLV-SE720N, SX720N and SE620N)
Approx. 430 × 96 × 251 mm (SLV-SE820N)

Mass
Approx. 2.8 kg (SLV-SE420K)
Approx. 3.1 kg (SLV-SE820N, SE720N, SX720N and SE620N)

Supplied accessories

Remote commander (1)
R6 (size AA) batteries (2)
Aerial cable (1)

Design and specifications are subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270°C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

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IMPORTANT SERVICE GUIDE

◆ MODE SWITCH (PROGRAM SWITCH) ASSEMBLY POINT

1) When installing the ass'y deck on the Main PCB, be sure to align the assembly point of mode switch.

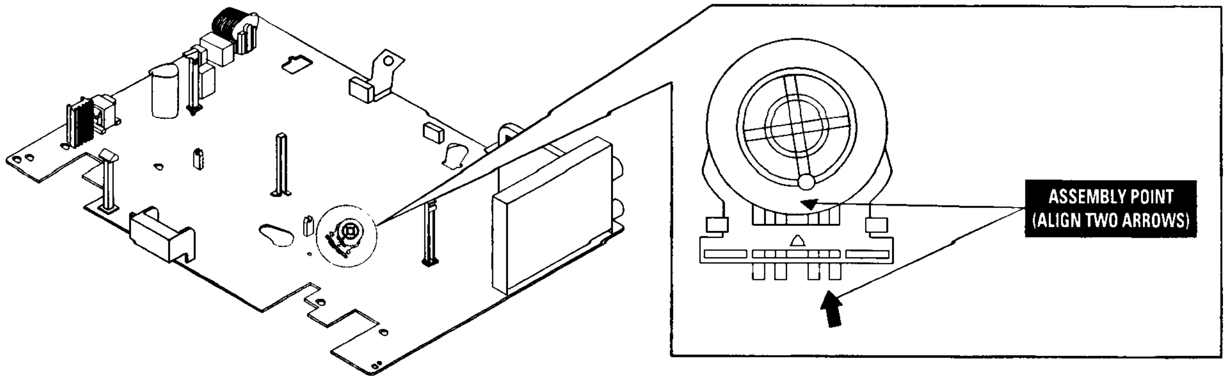


Fig. 1

◆ HOW TO EJECT THE CASSETTE TAPE
(If the unit does not operate on condition that tape is inserted into housing ass'y)

1) Turn the Gear Worm ❶ clockwise in the direction of arrow with screw driver. (See Fig. 2)
   (Other method ; Remove the screw of Motor Load Ass'y, Separate the Motor Load Ass'y)
2) When Slider S, T are approached in the position of unloading, rotate holder Clutch counterclockwise after inserting screw driver in the hole of frame's bottom in order to wind the unwiunded tape. (Refer to Fig. 3)
   (If you rotate Gear Worm ❶ continuously when tape is in state of unwinding, you may cause a tape contamination by grease and tape damage. Be sure to wind the unwiunded tape in the state of set horizontally.)
3) Rotate Gear Worm ❶ clockwise using screw driver again up to the state of eject mode and then pick out the tape. (Refer to Fig. 2)

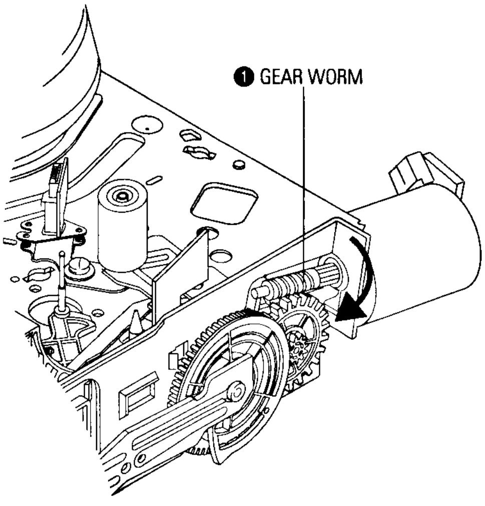


Fig. 2

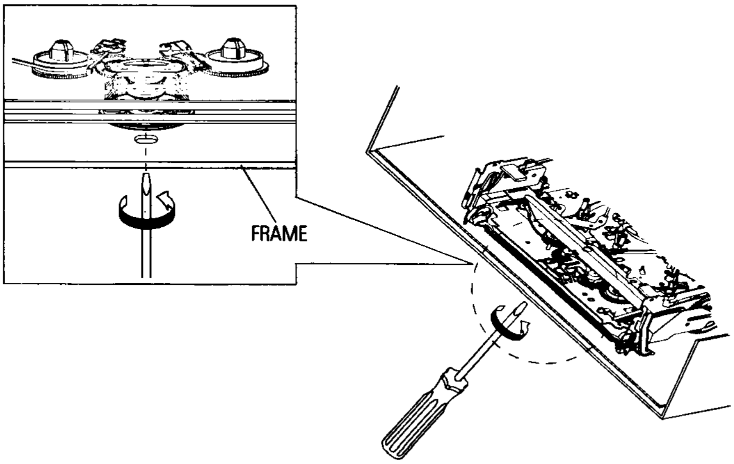


Fig. 3

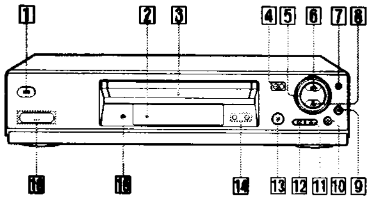
1. General

Index to parts and controls

Refer to the pages indicated in parentheses ( ) for details.

Front panel

For SLV-SE820N



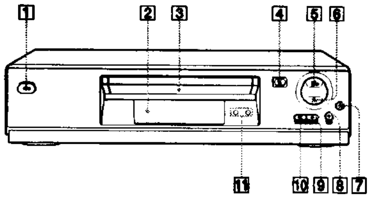
[1] I/⏻ (on/standby) switch
[2] Remote sensor (12)
[3] Tape compartment
[4] ⏏ (eject) button (39)
[5] Shuttle ring (58)
[6] ▷ (play) button* (39) (58)
[7] JOG button (58)
[8] ■ (stop) button* (22) (39) (74) (75)
[9] REC ● (record) button (43) (60) (74)
[10] ❚❚ (pause) button (39) (50) (74) (75)
[11] ▶▶ (fast-forward) button (39) (58)
[12] ◀◀ (rewind) button (39) (58)
[13] ⊕ DIAL TIMER (46)
[14] PROGRAM +/– buttons* (47) (59) (68)
[15] AUDIO DUB button (75)
[16] ⊸ LINE-2 L (left) ⊸ R (right) jacks (covered)* (72) (73) (75)

How to open the jack cover

1 Press the bottom of the cover.
2 Hook your finger on the top edge of the cover and pull it open.

* The ▷ (play), ■ (stop) and PROGRAM + buttons and jack cover have a tactile dot.

For SLV-SE720N, SX720N and SE620N

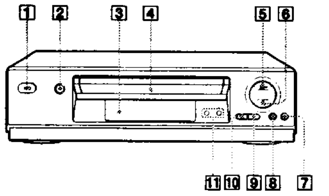


[1] I/⏻ (on/standby) switch
[2] Remote sensor (12)
[3] Tape compartment
[4] ⏏ (eject) button (39)
[5] ▷ (play) button* (39) (58)
[6] ■ (stop) button* (22) (39) (74) (75)
[7] REC ● (record) button (43) (60) (74)
[8] ❚❚ (pause) button (39) (74) (75)
[9] ▶▶ (fast-forward) button (39) (58)
[10] ◀◀ (rewind) button (39) (58)
[11] PROGRAM +/– buttons* (59) (68)

* The ▷ (play), ■ (stop) and PROGRAM + buttons have a tactile dot.

continued

For SLV-SE420K

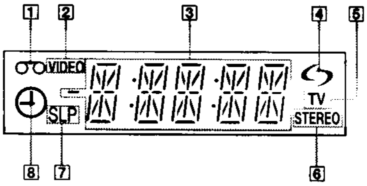


[1] I/⏻ (on/standby) switch
[2] ⏏ (eject) button (39)
[3] Remote sensor (12)
[4] Tape compartment
[5] ▷ (play) button* (39) (58)
[6] ■ (stop) button* (22) (39) (74) (75)
[7] REC ● (record) button (43) (60) (74)
[8] ❚❚ (pause) button (39) (74) (75)
[9] ▶▶ (fast-forward) button (39) (58)
[10] ◀◀ (rewind) button (39) (58)
[11] PROGRAM +/– buttons* (59) (68)

* The ▷ (play), ■ (stop) and PROGRAM + buttons have a tactile dot.

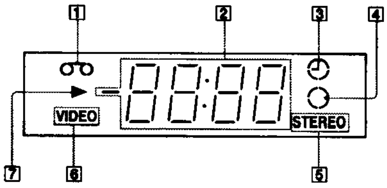
Display window

For SLV-SE820N, SE720N and SX720N



[1] Tape indicator
[2] VIDEO indicator (17) (43)
[3] Time counter/clock/line/programme position indicator (40) (42) (74)
[4] ↻ (smartlink) indicator (18)
[5] TV indicator (45)
[6] STEREO indicator (63)
[7] Tape speed indicators (42)
[8] Timer/recording indicator (43) (48) (53) (56)

For SLV-SE620N and SE420K



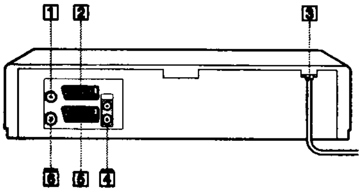
[1] Tape indicator
[2] Time counter/clock/line/programme position indicator (40) (42) (74)
[3] Timer indicator (48) (53) (56)
[4] Recording indicator (43)
[5] STEREO indicator* (63)
[6] VIDEO indicator (17) (43)
[7] Playback indicator

* not available on SLV-SE420K

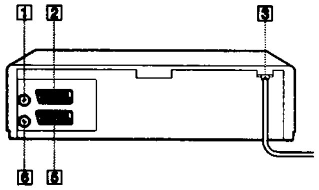
continued

Rear panel

For SLV-SE820N, SE720N, SX720N and SE620N



For SLV-SE420K



1 ꞀT (in from antenna) connector (16) (17)

2 LINE-3 (DEC/EXT) connector*1
LINE-2 (DEC/EXT) connector*2
(19) (36) (73)

3 Mains lead (16) (17)

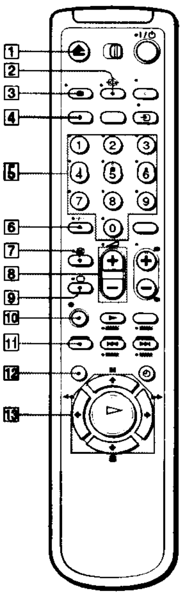
4 AUDIO (OUT/SORTIE) R/D (right) L/G (left) jacks*3 (19)

5 LINE-1 (EURO AV) connector (17) (36) (72)

6 (out to tv) connector (16) (17)

*1 SLV-SE820N only
*2 SLV-SE720N, SX720N and SE420K only
*3 not available on SLV-SE620N

Remote commander



1 ⏏ (eject) button (39)

2 (wide) button (*for TV*) (14) (15)

3 DISPLAY button (14) (40) (43)

4 COUNTER/REMAIN button (43)

5 Programme number buttons*1 (13) (44)

6 -/-- (ten's digit) button (13) (44)

7 (Teletext) button (*for TV*)*2 (14)

8 (volume) +/– buttons (*for TV*) (13)

9 ▢ TV power on/TV mode select button (*for TV*)*2 (13)

10 ● REC (record) button (43) (60)

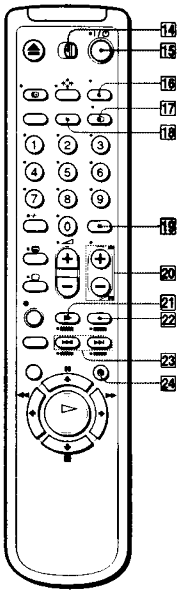
11 SP (Standard Play)/LP (Long Play) button (42)

12 MENU button (24) (61)

13 ❚❚ (pause)/🠅 button (24) (39)
■ (stop)/🠇 button (24) (39)
◀◀ (rewind)/🠄 button (24) (39) (58)
▶▶ (fast-forward)/🠆 button (24) (39) (58)
▷ (play)/OK button*1 (24) (39) (58)

*1 The ▷ (play), AUDIO MONITOR, number 5 and PROG + buttons have a tactile dot.
*2 SLV-SE820N only

continued



14 TV / VIDEO remote control switch (12)

15 I/⏻ (on/standby) switch (13) (14) (53)

16 AUDIO MONITOR button*1*3 (14) (64)

17 TV/VIDEO button (13) (17) (43)

18 CLEAR button (40) (52) (61)

19 INPUT SELECT button (42) (56) (74)

20 PROG (programme) +/– buttons*1 (13) (42)

Teletext page access buttons (*for TV*)*2 (14)

21 ❚▶ SLOW button*4 (58)

22 ×2 button*4 (58)

23 ⏮/⏭ (index search) buttons*3*4 (66)

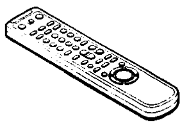
24 TIMER button (51) (55)

*1 The ▷ (play), AUDIO MONITOR, number 5 and PROG + buttons have a tactile dot.
*2 SLV-SE820N only
*3 not available on SLV-SE420K
*4 FASTEXT buttons (*for TV*) (SLV-SE820N only)

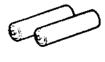
Step 1 : Unpacking

Check that you have received the following items with the VCR:

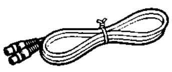
- Remote commander



- R6 (size AA) batteries



- Aerial cable



Check your model name

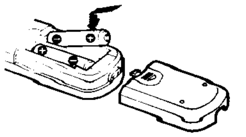
The instructions in this manual are for the 5 models: SLV-SE820N, SE720N, SX720N, SE620N and SE420K. Check your model name by looking at the rear panel of your VCR.
SLV-SE820N is the model used for illustration purposes. Any difference in operation is clearly indicated in the text, for example, "SLV-SE820N only."

Step 2 : Setting up the remote commander

Inserting the batteries

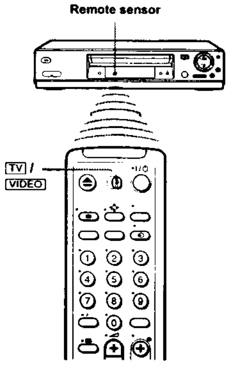
Insert two R6 (size AA) batteries by matching the + and – on the batteries to the diagram inside the battery compartment.

Insert the negative (–) end first, then push in and down until the positive (+) end clicks into position.

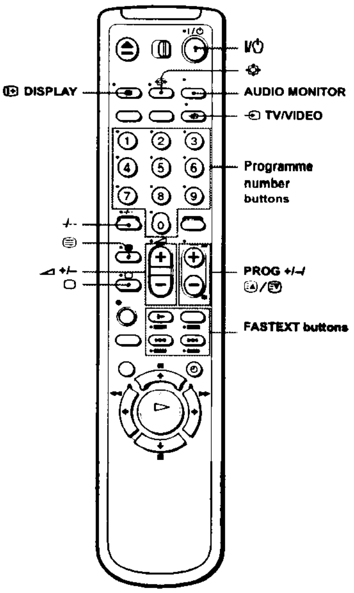


Using the remote commander

You can use this remote commander to operate this VCR and a Sony TV. Buttons on the remote commander marked with a dot (•) can be used to operate your Sony TV. If the TV does not have the ■ symbol near the remote sensor, this remote commander will not operate the TV.



To operate	Set TV / VIDEO to
the VCR	VIDEO and point at the remote sensor at the VCR
a Sony TV	TV and point at the remote sensor at the TV



TV control buttons

To	Press
Set the TV to standby mode	I/⏻
Select an input source: aerial in or line in	TV/VIDEO
Select the TV's programme position	Programme number buttons, -/--, PROG +/–
Adjust the volume of the TV	+/–
Switch to TV (Teletext off)*[1]	▢ (TV)

continued

To	Press
Switch to Teletext*[1]	(Teletext)
Select the sound*[2]	AUDIO MONITOR
Use FASTEXT*[1]	FASTEXT buttons
Call up the on-screen display	DISPLAY
Change the Teletext page*[1]	▲/▼
Switch to/from wide mode of a Sony wide TV (For other manufactures' wide TVs, see "Controlling other TVs with the remote commander (SLV-SE820N only)" below.)	(wide)

Notes

- With normal use, the batteries should last about three to six months.
- If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery together with an old one.
- Do not use different types of batteries together.
- Some buttons may not work with certain Sony TVs.

*[1] SLV-SE820N only
*[2] not available on SLV-SE420K

Controlling other TVs with the remote commander (SLV-SE820N only)

The remote commander is preprogrammed to control non-Sony TVs. If your TV is listed in the following table, set the appropriate manufacturer's code number.

1 Set TV / VIDEO at the top of the remote commander to TV.

2 Hold down I/⏻, and enter your TV's code number using the programme number buttons. Then release I/⏻.

Now you can use the following TV control buttons to control your TV:

I/⏻, TV/VIDEO, programme number buttons, -/-- (ten's digit), PROG +/–, +/–, ▢ (TV), (Teletext), FASTEXT buttons, (wide)*, MENU*, ↑/↓/←/→*, and OK*.

* These buttons may not work with all TVs.

Code numbers of controllable TVs

If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

To switch to wide mode, see the footnotes below this table for the applicable code numbers.

Manufacturer	Code number
Sony	01*[1], 02
Akai	68
Ferguson	52
Grundig	10*[1], 11*[1]
Hitachi	24
JVC	33
Loewe	45
Mivar	09, 70
NEC	66
Nokia	15, 16, 69*[3]

Manufacturer	Code number
Panasonic	17*[1], 49
Philips	06*[1], 07*[1], 08*[1]
Saba	12, 13
Samsung	22, 23
Sanyo	25
Sharp	29
Telefunken	36
Thomson	43*[2]
Toshiba	38

*[1] Press (wide) to switch the wide picture mode on or off.
*[2] Press (wide), then press +/– to select the wide picture mode you want.
*[3] Press (wide). The menu appears on the TV screen. Then, press ↑/↓/←/→ to select the wide picture you want and press OK.

Tip

- When you set your TV's code number correctly while the TV is turned on, the TV turns off automatically.

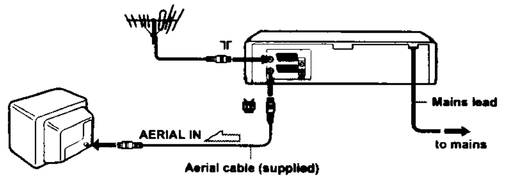
Notes

- If you enter a new code number, the code number previously entered will be erased.
- If the TV uses a different remote control system from the one programmed to work with the VCR, you cannot control your TV with the remote commander.
- When you replace the batteries of the remote commander, the code number may change. Set the appropriate code number every time you replace the batteries.

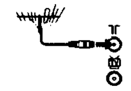
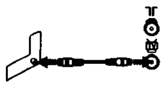
Step 3 : Connecting the VCR

If your TV has a Scart (EURO-AV) connector, see page 17.

If your TV does not have a Scart (EURO-AV) connector



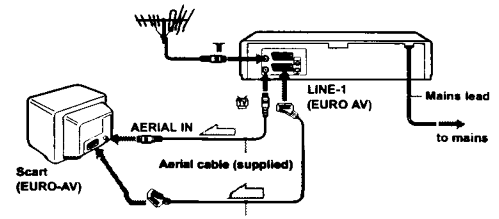
⇨ : **Signal flow**

1	Disconnect the aerial cable from your TV and connect it to Ͳ on the rear panel of the VCR.	
2	Connect 📺 of the VCR and the aerial input of your TV using the supplied aerial cable.	
3	Connect the mains lead to the mains.	

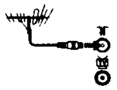
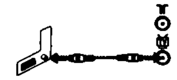
Note

- When you connect the VCR and your TV only with an aerial cable, you have to tune your TV to the VCR (see page 20).

If your TV has a Scart (EURO-AV) connector



⇨ : **Signal flow**

1	Disconnect the aerial cable from your TV and connect it to Ͳ on the rear panel of the VCR.	
2	Connect 📺 of the VCR and the aerial input of your TV using the supplied aerial cable.	
3	Connect LINE-1 (EURO AV) on the VCR and the Scart (EURO-AV) connector on the TV with the optional Scart cable. This connection improves picture and sound quality. Whenever you want to watch the VCR picture, press ⊟ TV/VIDEO to display the VIDEO indicator in the display window.	
4	Connect the mains lead to the mains.	

continued

About the SMARTLINK features (not available on SLV-SE620N and SE420K)

If the connected TV complies with SMARTLINK, MEGALOGIC*[1], EASYLINK*[2], Q-Link*[3], EURO VIEW LINK*[4], or T-V LINK*[5], this VCR automatically runs the SMARTLINK function after you complete the steps on the previous page (the ↻ indicator appears in the VCR's display window when you turn on the TV). You can enjoy the following SMARTLINK features.

- TV Direct Rec
  You can easily record what you are watching on the TV when the VCR is turned on. For details, see "Recording what you are watching on the TV (TV Direct Rec) (not available on SLV-SE620N and SE420K)" on page 45.
- One Touch Play
  With One Touch Play, you can start playback automatically without turning on the TV. For details, see "Starting playback automatically with one button (One Touch Play) (not available on SLV-SE620N and SE420K)" on page 41.
- One Touch Menu
  When the VCR is turned on, you can turn on the TV, set the TV to the video channel, and display the VCR's on-screen display automatically by pressing MENU on the remote commander.
- One Touch Timer
  When the VCR is turned on, you can turn on the TV, set the TV to the video channel, and display the timer recording menu (the TIMER PROGRAMMING menu or the SHOWVIEW menu) automatically by pressing ⏻ TIMER on the remote commander.
  You can set which timer recording menu is displayed using TIMER METHOD in the EASY OPERATION menu (see page 71).
- NexTView Download
  You can easily set the timer by using the NexTView Download function on your TV. Please refer to your TV's instruction manual.

*[1] "MEGALOGIC" is a registered trademark of Grundig Corporation.
*[2] "EASYLINK" is a trademark of Philips Corporation.
*[3] "Q-Link" is a trademark of Panasonic Corporation.
*[4] "EURO VIEW LINK" is a trademark of Toshiba Corporation.
*[5] "T-V LINK" is a trademark of JVC Corporation.

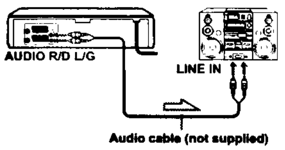
Note

- Not all TVs respond to the functions above.

Additional connections

To a stereo system (not available on SLV-SE620N and SE420K)

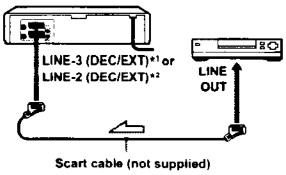
You can improve sound quality by connecting a stereo system to the AUDIO R/D L/G jacks as shown on the right.



⇨ : **Signal flow**

To a satellite or digital tuner with Line Through (not available on SLV-SE620N)

Using the Line Through function, you can watch programmes from a satellite or digital tuner connected to this VCR on the TV even when the VCR is turned off. When you turn on the satellite or digital tuner, this VCR automatically sends the signal from the satellite or digital tuner to the TV without turning itself on.



⇨ : **Signal flow**

1. Connect the satellite or digital tuner to the LINE-3 (DEC/EXT)*[1] or LINE-2 (DEC/EXT)*[2] connector as shown above.
2. Turn off the VCR.

   To watch a programme, turn on the satellite or digital tuner and the TV.

Notes

- The Line Through function will not operate properly if POWER SAVE in the USER SET menu is set to ON. Set POWER SAVE to OFF to ensure proper operation (see page 69).
- You cannot watch programmes on the TV while recording unless you are recording a satellite or digital programme.
- This function may not work with some types of satellite or digital tuners.
- When the VCR is turned off, set the TV to the video channel.

*[1] SLV-SE820N only
*[2] SLV-SE720N, SX720N and SE420K only

Step 4 : Setting up the VCR with the Auto Set Up function

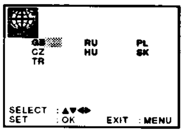
Before using the VCR for the first time, set up the VCR using the Auto Set Up function. With this function, you can set the language for the on-screen display, TV channels, guide channels for the ShowView system*, and VCR clock* automatically.

1 Turn on your TV and set it to the video channel.

If your TV does not have a Scart (EURO-AV) connector, tune the TV to channel 32 (the initial RF channel for this VCR). Refer to your TV manual for TV tuning instructions. If the picture does not appear clearly, see "To change the RF channel" on page 22.

2 Connect the mains lead to the mains.

The VCR automatically turns on, and the language abbreviations appear on the TV screen.



The abbreviations of the languages are as follows:

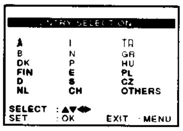
Abbreviation	Country	Language
CZ	Czecho	Czech
HU	Hungary	Hungarian
PL	Poland	Polish
SK	Slovakia	Slovak
TR	Turkey	Turkish
RU	Russia	Russian

3 Press ↑/↓/←/→ to select the language abbreviation from the table in step 2, then press OK.

The message for the Auto Set Up function appears.

4 Press OK.

The COUNTRY SELECTION menu* appears.



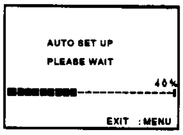
The abbreviations of the countries are as follows:

Abbreviation	Country
A	Austria
B	Belgium
DK	Denmark
FIN	Finland
D	Germany
NL	Netherlands
I	Italy
N	Norway
P	Portugal

Abbreviation	Country
E	Spain
S	Sweden
CH	Switzerland
TR	Turkey
GR	Greece
HU	Hungary
PL	Poland
CZ	Czech
OTHERS	other countries

5 **For SLV-SE820N, SE720N and SX720N**

Press ↑/↓ ← → to select the abbreviation of your country from the table in step 4, then press OK. If your country does not appear, select OTHERS.



The VCR starts searching for all of the receivable channels and presets them (in the appropriate order for your local area).

If you want to change the order of the channels or disable unwanted programme positions, see "Changing/disabling programme positions" on page 31.

After the search or download is complete, the current time appears for any stations that transmit a time signal. If the time does not appear, set the clock manually. See "Setting the clock" on page 24.

For SLV-SE620N and SE420K

The clock setting menu appears. See "Setting the clock" on page 24

continued

To cancel the Auto Set Up function

Press MENU.

To change the RF channel

If the picture does not appear clearly on the TV, change the RF channel on the VCR and TV. Select INSTALLATION from the menu, then press ↑/↓ to highlight VCR OUTPUT CH and press →. Select the RF channel by pressing the ↑ ↓ buttons. Then, tune the TV to the new RF channel so that a clear picture appears.

Tip

- If you want to change the language for the on-screen display from the one preset in the Auto Set Up function, see page 27.

Notes

- Whenever you operate the Auto Set Up function, some of the settings (ShowView*, timer, etc.) will be reset. If this happens, you have to set them again.
- Auto preset starts automatically only when you plug in the mains lead for the first time after you purchase the VCR.
- After using the Auto Set Up function, the language abbreviations do not appear automatically when you connect the mains lead again. If you want to use the Auto Set Up function again, press MENU, then press ↑/↓/←/→ to highlight INSTALLATION and press OK. Press ↑/↓ to highlight AUTO SET UP, then repeat all procedures from step 4.
- Auto preset can be performed by pressing ■ (stop) on the VCR continuously for 5 seconds or more with no tape inserted.

* not available on SLV-SE620N and SE420K

Step 5 : Selecting the TV system

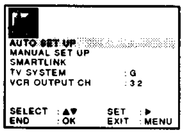
You must select the appropriate TV system for your area.

Before you start…

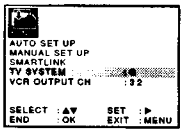
- Turn on the VCR and the TV.
- Set the TV to the video channel.
- Refer to "Index to parts and controls" for button locations.

1 MENU

Press MENU, then press ↑/↓/←/→ to highlight INSTALLATION and press OK.



2 Press ↑/↓ to highlight TV SYSTEM, then press →.



3 Press → to select the appropriate TV system. Select "G" for the B/G TV system or "K" for the D/K TV system.

4 MENU

Press MENU to exit the menu.

Setting the clock

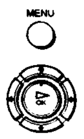
You must set the time and date on the VCR to use the timer features properly.

The Auto Clock Set function* works only if a station in your area is broadcasting a time signal.

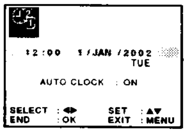
Before you start…

- Turn on the VCR and the TV.
- Set the TV to the video channel.
- Refer to "Index to parts and controls" for button locations.

1



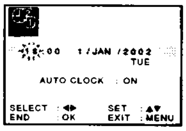
Press MENU, then press ⬆/⬇/⬅/➡ to highlight CLOCK SET and press OK.



```
12:00   1/JAN/2002
              TUE
AUTO CLOCK  : ON

SELECT : ◀▶      SET  : ▲▼
END    : OK      EXIT : MENU
```

2

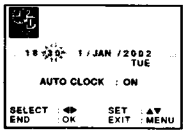
Press ⬆/⬇ to set the hour.



```
18:00   1/JAN/2002
              TUE
AUTO CLOCK  : ON

SELECT : ◀▶      SET  : ▲▼
END    : OK      EXIT : MENU
```

3

Press ➡ to select the minutes and set the minutes by pressing ⬆/⬇.

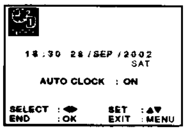


```
18:30   1/JAN/2002
              TUE
AUTO CLOCK  : ON

SELECT : ◀▶      SET  : ▲▼
END    : OK      EXIT : MENU
```

4

Set the day, month, and year in sequence by pressing ➡ to select the item to be set, and press ⬆/⬇ to select the digits, then press ➡.

The day of the week is set automatically.



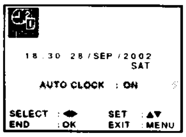
```
18:30  28/SEP/2002
              SAT
AUTO CLOCK  : ON

SELECT : ◀▶      SET  : ▲▼
END    : OK      EXIT : MENU
```

5

Press ⬆/⬇ to select ON for the setting of the Auto Clock Set function*.

The VCR automatically sets the clock according to the time signal broadcast between the channels PR 1 to PR 5.

If you do not need the Auto Clock Set function, select OFF.



```
18:30  28/SEP/2002
              SAT
AUTO CLOCK  : ON

SELECT : ◀▶      SET  : ▲▼
END    : OK      EXIT : MENU
```

6

Press MENU to exit the menu.

Tips

- **If you set AUTO CLOCK* to ON, the Auto Clock Set function is activated** whenever the VCR is turned off. The time is adjusted automatically by making reference to the time signal from the station.
- To change the digits while setting, press ⬅ to return to the item to be changed, and select the digits by pressing ⬆/⬇.

* not available on SLV-SE620N and SE420K

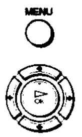
Downloading the TV tuner's preset data (SLV-SE820N, SE720N and SX720N only)

You can download your TV tuner's preset data to the VCR and tune the VCR according to that data using the SMARTLINK connection.

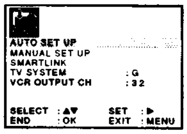
Before you start…

- Turn on the VCR and the TV.
- Set the TV to the video channel.
- Refer to "Index to parts and controls" for button locations.

1



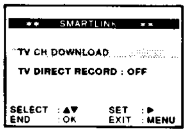
Press MENU, then press ⬆/⬇/⬅/➡ to highlight INSTALLATION and press OK.



```
AUTO SET UP
MANUAL SET UP
SMARTLINK
TV SYSTEM          : G
VCR OUTPUT CH      : 32

SELECT : ▲▼      SET  : ▶
END    : OK      EXIT : MENU
```

2

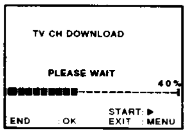
Press ⬆/⬇ to highlight SMARTLINK, then press ➡.



```
**    SMARTLINK    **

TV CH DOWNLOAD
TV DIRECT RECORD : OFF

SELECT : ▲▼      SET  : ▶
END    : OK      EXIT : MENU
```

3

Press ⬆/⬇ to highlight TV CH DOWNLOAD, then press ➡. The Preset Download function starts and the ⊂⊃ indicator flashes in the display window during download.



```
TV CH DOWNLOAD

PLEASE WAIT
                        40%
■■■■■■■■■■--------------|
                 START: ▶
END    : OK      EXIT : MENU
```

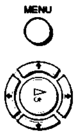
Selecting a language

You can change the on-screen display language from the one you selected with the Auto Set Up function.

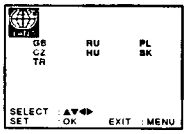
Before you start…

- Turn on the VCR and the TV.
- Set the TV to the video channel.
- Refer to "Index to parts and controls" for button locations.

1

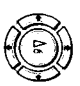


Press MENU, then press ⬆/⬇/⬅/➡ to highlight LANGUAGE SET and press OK.



```
GB        RU        PL
CZ        HU        SK
TR

SELECT : ▲▼◀▶
SET    : OK      EXIT : MENU
```

2



Press ⬆/⬇/⬅/➡ to highlight the abbreviation of the desired language from the table on page 20, then press OK.

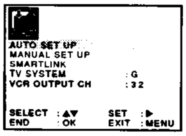
Presetting channels

If some channels could not be preset using the Auto Set Up function, you can preset them manually.

Before you start...

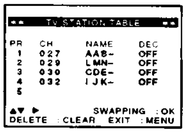
- Turn on the VCR and the TV.
- Set the TV to the video channel.
- Refer to "Index to parts and controls" for button locations.

1 Press MENU, then press ↑/↓/←/→ to highlight INSTALLATION and press OK.



```
AUTO SET UP
MANUAL SET UP
SMARTLINK
TV SYSTEM            : G
VCR OUTPUT CH        : 32

SELECT  : ▲▼      SET   : ▶
END     : OK      EXIT  : MENU
```

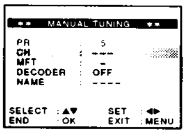
2 Press ↑/↓ to highlight MANUAL SET UP, then press →.



```
**        TV STATION TABLE        **
PR    CH     NAME    DEC
 1    027    AAB-    OFF
 2    029    LMN-    OFF
 3    030    CDE-    OFF
 4    032    IJK-    OFF
 5
▲▼ ▶               SWAPPING  : OK
DELETE  : CLEAR    EXIT      : MENU
```

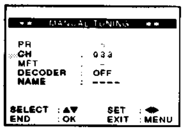
3 Press ↑/↓ to highlight the row which you want to preset, then press →.

To display other pages for programme positions 6 to 80, press ↑/↓ repeatedly.



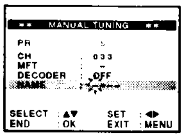
```
**      MANUAL TUNING      **
PR          :  5
CH          :  ---
MFT         :  -
DECODER     :  OFF
NAME        :  ----

SELECT  : ▲▼      SET   : ◀▶
END     : OK      EXIT  : MENU
```

4 Press ←/→ repeatedly until the channel you want is displayed.



```
**      MANUAL TUNING      **
PR          :  5
CH          :  033
MFT         :  -
DECODER     :  OFF
NAME        :  ----

SELECT  : ▲▼      SET   : ◀▶
END     : OK      EXIT  : MENU
```

5 Press ↑/↓ to highlight NAME, then press →.



```
**      MANUAL TUNING      **
PR          :  5
CH          :  033
MFT         :  -
DECODER     :  OFF
NAME        :  ----

SELECT  : ▲▼      SET   : ◀▶
END     : OK      EXIT  : MENU
```

6 Enter the station name.

1. Press ↑/↓ to select a character. Each time you press ↑, the character changes as shown below.

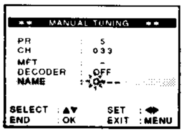
   A → B → ... → Z → 0 → 1 → ... → 9 → A

2. Press → to set the next character.

   The next space is flashed.

   To correct a character, press ←/→ until the character you want to correct is flashed, then reset it.

   You can set up to 4 characters for the station name.



```
**      MANUAL TUNING      **
PR          :  5
CH          :  033
MFT         :  -
DECODER     :  OFF
NAME        :  C---

SELECT  : ▲▼      SET   : ◀▶
END     : OK      EXIT  : MENU
```

7 Press OK to confirm the station name.

8 **Press MENU to exit the menu.**

continued

If the picture is not clear

If the picture is not clear, you may use the Manual Fine Tuning (MFT) function. After step 4, press ↑/↓ to select MFT. Press ←/→ to get a clear picture, then press MENU to exit the menu.

Tips

- To set the programme position for the decoder, see "Setting the Canal Plus decoder (not available on SLV-SE620N)" on page 36.
- The VCR must receive channel information for station names to appear automatically.

Notes

- If the TV sound is distored or noisy, select the appropriate TV system ("G" or "K") for your area (see page 23).
- When adjusting MFT, the menu may become difficult to read due to interference from the picture being received.

Changing/disabling programme positions

After setting the channels, you can change the programme positions as you like. If any programme positions are unused or contain unwanted channels, you can disable them.

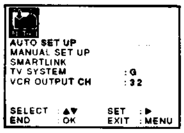
You can also change the station names. If the station names are not displayed, you can enter them manually.

Changing programme positions

Before you start...

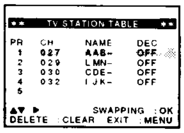
- Turn on the VCR and the TV.
- Set the TV to the video channel.
- Refer to "Index to parts and controls" for button locations.

1 Press MENU, then press ↑/↓/←/→ to highlight INSTALLATION and press OK.



```
AUTO SET UP
MANUAL SET UP
SMARTLINK
TV SYSTEM            : G
VCR OUTPUT CH        : 32

SELECT  : ▲▼      SET   : ▶
END     : OK      EXIT  : MENU
```

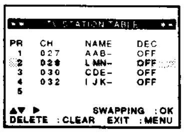
2 Press ↑/↓ to highlight MANUAL SET UP, then press →.



```
**        TV STATION TABLE        **
PR    CH     NAME    DEC
 1    027    AAB-    OFF
 2    029    LMN-    OFF
 3    030    CDE-    OFF
 4    032    IJK-    OFF
 5
▲▼ ▶               SWAPPING  : OK
DELETE  : CLEAR    EXIT      : MENU
```

3 Press ↑/↓ to highlight the row containing the programme position you want to change.

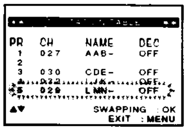
To display other pages for programme positions 6 to 80, press ↑/↓ repeatedly.



```
**        TV STATION TABLE        **
PR    CH     NAME    DEC
 1    027    AAB-    OFF
 2    029    LMN-    OFF
 3    030    CDE-    OFF
 4    032    IJK-    OFF
 5
▲▼ ▶               SWAPPING  : OK
DELETE  : CLEAR    EXIT      : MENU
```

continued

4 Press OK, then press ↑/↓ to move to the desired programme position.



```
**        TV STATION TABLE        **
PR   CH     NAME    DEC
 1   027    AAB-    OFF
 2
 3   030    CDE-    OFF
 4   032    IJK-    OFF
 5   029    LMN-    OFF
▲▼             SWAPPING  : OK
                   EXIT  : MENU
```

5 Press OK to confirm the setting.

6 To change the programme position of another station, repeat steps 3 through 5.

7 MENU

Press MENU to exit the menu.

Disabling unwanted programme positions

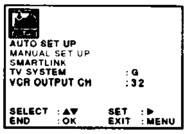
After presetting channels, you can disable unused programme positions. The disabled positions will be skipped later when you press the PROG +/– buttons.

Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.
- Refer to "Index to parts and controls" for button locations.

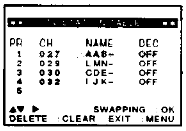
1 MENU

Press MENU, then press ↑/↓/←/→ to highlight INSTALLATION, and press OK.



```
AUTO SET UP
MANUAL SET UP
SMARTLINK
TV SYSTEM          : G
VCR OUTPUT CH      : 32

SELECT  : ▲▼      SET   : ▶
END     : OK      EXIT  : MENU
```

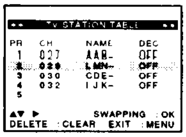
2 Press ↑/↓ to highlight MANUAL SET UP, then press →.



```
**        TV STATION TABLE        **
PR   CH     NAME    DEC
 1   027    AAB-    OFF
 2   029    LMN-    OFF
 3   030    CDE-    OFF
 4   032    IJK-    OFF
 5
▲▼ ▶             SWAPPING  : OK
DELETE  : CLEAR  EXIT      : MENU
```

3 Press ↑/↓ to highlight the row which you want to disable.

To display other pages for programme positions 6 to 80, press ↑/↓ repeatedly.

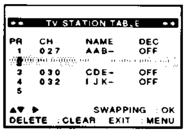


```
**        TV STATION TABLE        **
PR   CH     NAME    DEC
 1   027    AAB-    OFF
 2   029    LMN-    OFF
 3   030    CDE-    OFF
 4   032    IJK-    OFF
 5
▲▼ ▶             SWAPPING  : OK
DELETE  : CLEAR  EXIT      : MENU
```

4 CLEAR

Press CLEAR.

The selected row will be cleared as shown on the right.



```
**        TV STATION TABLE        **
PR   CH     NAME    DEC
 1   027    AAB-    OFF
 2
 3   030    CDE-    OFF
 4   032    IJK-    OFF
 5
▲▼ ▶             SWAPPING  : OK
DELETE  : CLEAR  EXIT      : MENU
```

5 Repeat steps 3 and 4 for any other programme positions you want to disable.

6 MENU

Press MENU to exit the menu.

Note

- Be sure to select the programme position you want to disable correctly. If you disable a programme position by mistake, you need to reset that channel manually.

continued

Changing the station names (not available on SLV-SE620N and SE420K)

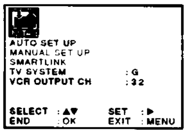
You can change or enter the station names (up to 4 characters). The VCR must receive channel information for station names to appear automatically.

Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.
- Refer to "Index to parts and controls" for button locations.

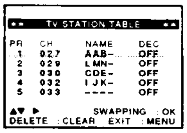
1 MENU

Press MENU, then press ↑/↓/←/→ to highlight INSTALLATION and press OK.



```
AUTO SET UP
MANUAL SET UP
SMARTLINK
TV SYSTEM          : G
VCR OUTPUT CH      : 32

SELECT  : ▲▼      SET   : ▶
END     : OK      EXIT  : MENU
```

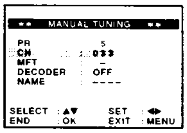
2 Press ↑/↓ to highlight MANUAL SET UP, then press →.



```
**        TV STATION TABLE        **
PR   CH     NAME    DEC
 1   027    AAB-    OFF
 2   029    LMN-    OFF
 3   030    CDE-    OFF
 4   032    IJK-    OFF
 5   033    ----    OFF
▲▼ ▶             SWAPPING  : OK
DELETE  : CLEAR  EXIT      : MENU
```

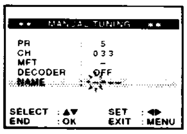
3 Press ↑/↓ to highlight the row which you want to change or enter the station name, then press →.

To display other pages for programme positions 6 to 80, press ↑/↓ repeatedly.



```
**        MANUAL TUNING        **
PR                 5
CH           :   033
MFT          :    -
DECODER      :   OFF
NAME         :   ----

SELECT  : ▲▼      SET   : ◀▶
END     : OK      EXIT  : MENU
```

4 Press ↑/↓ to highlight NAME, then press →.



```
**        MANUAL TUNING        **
PR           :     5
CH               033
MFT          :    -
DECODER      :   OFF
NAME         :   ----

SELECT  : ▲▼      SET   : ◀▶
END     : OK      EXIT  : MENU
```

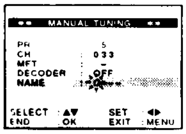
5 Enter the station name.

1 Press ↑/↓ to select a character.
Each time you press ↑, the character changes as shown below.

A → B → ... → Z → 0 → 1 → ... → 9 → A

2 Press → to set the next character.
The next space flashes.
To correct a character, press ←/→ until the character you want to correct flashes, then reset it.

You can set up to 4 characters for the station name.



```
**        MANUAL TUNING        **
PR                 5
CH           :   033
MFT          :    -
DECODER      :   OFF
NAME         :   0---

SELECT  : ▲▼      SET   : ◀▶
END     : OK      EXIT  : MENU
```

6 Press OK to confirm the new name.

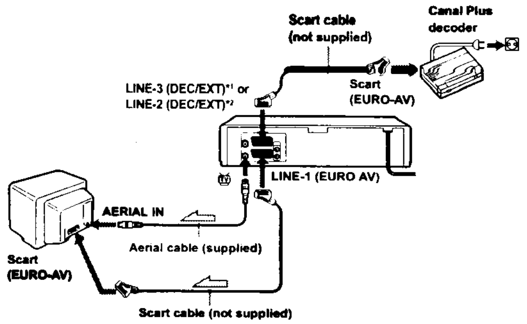
7 MENU

Press MENU to exit the menu.

Setting the Canal Plus decoder
(not available on SLV-SE620N)

You can watch or record Canal Plus programmes if you connect a decoder (not supplied) to the VCR.

Connecting a decoder



⇦ : **Signal flow**

Setting Canal Plus channels

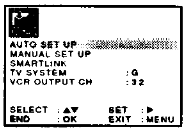
To watch or record Canal Plus programmes, set your VCR to receive the channels using the on-screen display.

In order to set the channels correctly, be sure to follow all of the steps below.

Before you start...

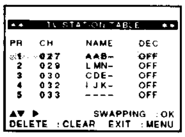
- Turn on the VCR, the TV, and the decoder.
- Set the TV to the video channel.
- Refer to "Index to parts and controls" for button locations.

1 Press MENU, then press ↑/↓/←/→ to highlight INSTALLATION and press OK.



```
AUTO SET UP
MANUAL SET UP
SMARTLINK
TV SYSTEM          : G
VCR OUTPUT CH      : 32

SELECT  : ▲▼     SET   : ▶
END     : OK     EXIT  : MENU
```

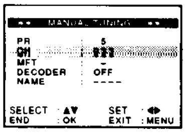
2 Press ↑/↓ to highlight MANUAL SET UP, then press →.



```
** TV STATION TABLE **
PR   CH    NAME   DEC
1    027   AAB-   OFF
2    029   LMN-   OFF
3    030   CDE-   OFF
4    032   IJK-   OFF
5    033   ----   OFF

▲▼ ▶          SWAPPING  : OK
DELETE  : CLEAR  EXIT  : MENU
```

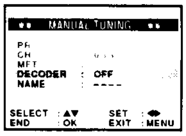
3 Press ↑/↓ to highlight the row which you want to set for the decoder, then press →.

To display positions 6 to 80, press ↑/↓ repeatedly.



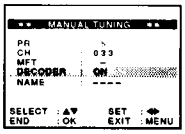
```
** MANUAL TUNING **
PR        :  5
CH        :
MFT       :  -
DECODER   :  OFF
NAME      :  ----

SELECT  : ▲▼     SET   : ◀▶
END     : OK     EXIT  : MENU
```

4 Press ↑/↓ to highlight DECODER.



```
** MANUAL TUNING **
PR
CH
MFT
DECODER   :  OFF
NAME      :  ----

SELECT  : ▲▼     SET   : ◀▶
END     : OK     EXIT  : MENU
```

5 Press → to set DECODER to ON, then press OK.



```
** MANUAL TUNING **
PR           5
CH           033
MFT       :  -
DECODER   :  ON
NAME      :  ----

SELECT  : ▲▼     SET   : ◀▶
END     : OK     EXIT  : MENU
```

continued

6 Press MENU to exit the menu.

Notes

- To superimpose subtitles while watching Canal Plus programmes, make both decoder-VCR and VCR-TV connections using 21-pin Scart cables that are compatible with the RGB signals. You cannot record subtitles on the VCR.
- When you watch Canal Plus programmes through the RFU input of the TV, press ⇥ TV/VIDEO so that the VIDEO indicator appears in the display window.

*1 SLV-SE820N only

*2 SLV-SE720N, SX720N and SE420K only

Playing a tape

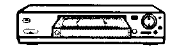
Before you start...

- Refer to "Index to parts and controls" for button locations.

1 Turn on your TV and set it to the video channel.

2 Insert a tape.

The VCR turns on and starts playing automatically if you insert a tape with its safety tab removed.



3 Press ▷ (play).

When the tape reaches the end, it will rewind automatically.

Additional tasks

To	Press
Stop play	■ (stop)
Pause play	❚❚ (pause)
Resume play after pause	❚❚ (pause) or ▷ (play)
Fast-forward the tape	▶▶ (fast-forward) during stop
Rewind the tape	◀◀ (rewind) during stop
Eject the tape	⏏ (eject)

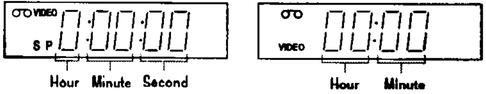
continued

To set the colour system

If the playback picture has no colour, or streaks appear during playback, set COLOUR SYSTEM in the USER SET menu to conform to the system that the tape was recorded in (see page 70). (Normally set the option to AUTO.)

To use the time counter

Press CLEAR at the point on the tape that you want to find later. The counter in the display window resets to "0:00:00" or "00:00." Search for the point afterwards by referring to the counter.



To display the counter on the TV screen, press ⊕ DISPLAY.

Notes

- The counter resets to "0:00:00" or "00:00" whenever a tape is reinserted.
- The counter stops counting when it comes to a portion with no recording.
- Depending on your TV, the following may occur while playing an NTSC-recorded tape:
  - –The picture becomes black and white.
  - –The picture shakes.
  - –No picture appears on the TV screen.
  - –Black streaks appear horizontally on the TV screen.
  - –The colour density increases or decreases.
- While setting the menu on the TV screen, buttons for playback on the remote commander do not function.

Starting playback automatically with one button (One Touch Play) (not available on SLV-SE620N and SE420K)

If you use the SMARTLINK connection, you can turn on the TV, set the TV to the video channel, and start playback automatically with one button.

1 Insert a tape.

The VCR automatically turns on.

If you insert a tape with its safety tab removed, the TV turns on and switches to the video channel. Playback starts automatically.

2 Press ⊳ (play).

The TV turns on and switches to the video channel automatically. Playback starts.

Tip

- When there already is a tape in the VCR, press I/⏻ to turn on the VCR first. When you press ⊳ (play), the TV turns on, the TV is set to the video channel, and playback starts automatically in one sequence.

Note

- When you use the One Touch Play function, leave the TV on or in the standby mode.

Recording TV programmes

Before you start...

- Refer to "Index to parts and controls" for button locations.

1 Turn on your TV and set it to the video channel.

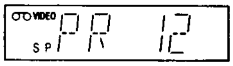
To record from a decoder, turn it on.

2 Insert a tape with its safety tab in place.

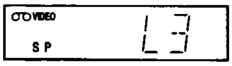
3

PROG
INPUT SELECT

- To record a normal channel, press PROG +/– until the programme position number you want appears in the display window.



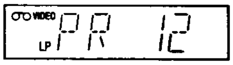
- To record from a decoder or other source connected to one or more of the LINE inputs, press INPUT SELECT until the connected line appears in the display window.

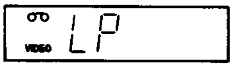


4

Press SP/LP to select the tape speed, SP or LP.

LP (Long Play) provides recording time twice as long as SP. However, SP (Standard Play) produces better picture and audio quality.

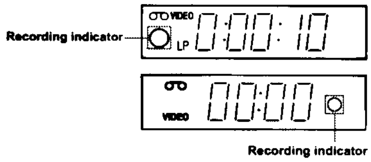




5

Press ● REC to start recording.

The recording indicator lights up red in the display window.

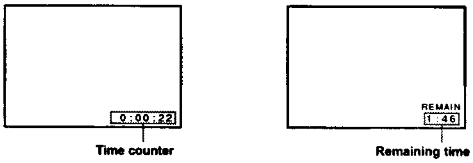


To stop recording

Press ■ (stop).

To check the remaining time

Press ⊕ DISPLAY twice. With the display on, press COUNTER/REMAIN to check the remaining time. Each time you press COUNTER/REMAIN, the time counter and the remaining time appear alternately.



In order to get an accurate remaining time indication, be sure TAPE SELECT in the USER SET menu is set according to the tape type you use (see page 70).

To watch another TV programme while recording

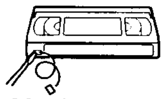
1 Press ⊖ TV/VIDEO to turn off the VIDEO indicator in the display window.

2 Select another programme position on the TV.

continued

To save a recording

To prevent accidental erasure, break off the safety tab as illustrated. To record on the same tape again, cover the tab hole with adhesive tape.



Tips

- To select a programme position, you can use the programme number buttons on the remote commander. For two-digit numbers, for example, press 2 and 3 to select "PR 23."
- If you connect additional equipment to a LINE connector or jack, you can select the input signal using the INPUT SELECT or PROG +/– buttons.
- The ⊕ DISPLAY information appears on the TV screen indicating information about the tape, but the information will not be recorded on the tape.
- If you do not want to watch TV while recording, you can turn off the TV. When using a decoder, make sure to leave it on.

Notes

- The ⊕ DISPLAY information does not appear during still (pause) mode or slow-motion playback.
- If a tape has portions recorded in both PAL (MESECAM) and NTSC systems, the time counter reading will not be correct. This discrepancy is due to the difference between the counting cycles of the two video systems.
- You cannot watch a Canal Plus programme while recording another Canal Plus programme.*
- When you insert a non-standard commercially available tape, the remaining time may not be correct.
- The remaining time is intended for rough measurement only.
- About 30 seconds after the tape begins playback, the tape remaining time will be displayed.

* not available on SLV-SE620N

Recording what you are watching on the TV (TV Direct Rec) (not available on SLV-SE620N and SE420K)

If you use the SMARTLINK connection, you can easily record what you are watching on the TV (other than tapes being played on the VCR).

1 Press I/⏻ to turn on the VCR.

2 Insert a tape with its safety tab in place.

3 Press ● REC while you are watching a TV programme or external source.

The TV indicator lights up and the VCR starts recording what you are watching on the TV.

Tip

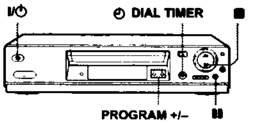
- The TV indicator appears in the display window after you press ● REC in some situations such as:
  - when you are watching a source connected to the TV's line input, or
  - when the TV tuner preset data for the programme position is different from the data in the VCR tuner preset.

Notes

- You cannot record what you are watching using this method when the VCR is in the following modes; pause, timer standby, tuner preset, Auto Set Up, and recording.
- When the TV indicator is lit in the display window, do not turn off the TV nor change the TV programme position. When the TV indicator is not lit, the VCR continues recording the programme even if you change the TV programme position on the TV.
- To use the TV Direct Rec function, select SMARTLINK in the INSTALLATION menu, then set TV DIRECT RECORD to ON.

Recording TV programmes using the Dial Timer (SLV-SE820N only)

The Dial Timer function allows you to make timer recordings of programmes without turning on your TV. Set the recording timer to record up to eight programmes, including settings made with other timer methods, that will be broadcast within the next month. The recording start time and recording stop time can be set at one minute intervals.



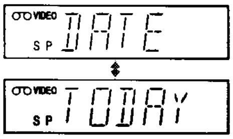
Before you start...

- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- To record from a decoder, turn it on.
- Refer to "Index to parts and controls" for button locations.

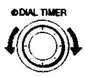
1 Press ⊕ DIAL TIMER.

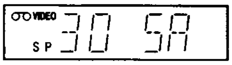
"DATE" and "TODAY" appear alternately in the display window.

If the date and time are not set, "DAY" will appear. See step 2 in the following section, "To set the clock" to set the date and time.



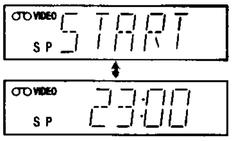
2 Turn ⊕ DIAL TIMER to set the recording date.



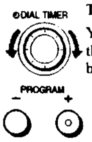


3 Press ⊕ DIAL TIMER.

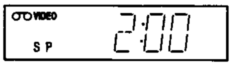
"START" and the current time appear alternately in the display window.



4 Turn ⊕ DIAL TIMER to set the recording start time.

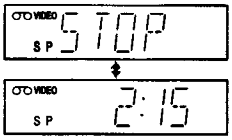


You can set the recording start time in 15 minute intervals or adjust the time in one minute intervals by pressing the PROGRAM +/– buttons.

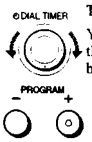


5 Press ⊕ DIAL TIMER.

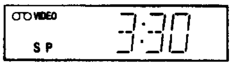
"STOP" and the recording stop time alternately appear in the display window.



6 Turn ⊕ DIAL TIMER to set the recording stop time.

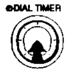


You can set the recording stop time in 15 minute intervals or adjust the time in one minute intervals by pressing the PROGRAM +/– buttons.



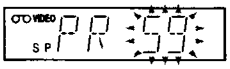
continued

7 ⊕DIAL TIMER

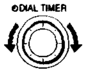


Press ⊕ DIAL TIMER.

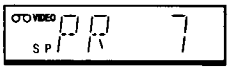
The programme position or LINE input appears in the display window.



8 ⊕DIAL TIMER



Turn ⊕ DIAL TIMER to set the programme position.



INPUT SELECT

To record from a decoder or other source connected to one or more of the LINE inputs, turn ⊕ DIAL TIMER or press INPUT SELECT to display the connected line in the display window.

9 ⊕DIAL TIMER

Press ⊕ DIAL TIMER to complete the setting.

"OK" appears in the display window for about five seconds.

The ⊕ indicator appears in the display window and the VCR stands by for recording.

To record from a decoder or other source, leave the connected equipment switched on.

To return to the previous step

To return to the previous step, press the PROGRAM + and – buttons on the VCR at the same time during any of the Dial Timer settings.

To stop recording

To stop the VCR while recording, press ■ (stop).

To use the VCR after setting the timer

To use the VCR before a recording begins, just press I/⏻. The ⊕ indicator turns off and the VCR switches on. Remember to press I/⏻ to reset the VCR to recording standby after using the VCR.

You can also do the following tasks while the VCR is recording:

- Reset the counter (page 40).
- Display tape information on the TV screen (page 43).
- Check the timer settings (page 61).
- Watch another TV programme (page 43).

To set the clock

1 Hold down ⊕ DIAL TIMER so that "DAY" appears in the display window. However, if the clock has already been set, the current setting appears.

2 Turn ⊕ DIAL TIMER to set the day.

3 Press ⊕ DIAL TIMER.
"MONTH" appears in the display window.

4 Turn and press ⊕ DIAL TIMER to set the month, and then the year.
After you set the year, "CLOCK" appears in the display window again.

5 Turn and press ⊕ DIAL TIMER to set the hour and minute.

6 When you have finished setting the time, press ⊕ DIAL TIMER to start the clock.

Tips

- To cancel a Dial Timer setting, press ■ (stop) on the VCR while you are making the setting.
- The programme is recorded in the current tape speed mode. To change the tape speed, press SP/LP before you complete the setting in step 9.
- To check, change, or cancel the programme setting, see "Checking/changing/cancelling timer settings" on page 61.

Notes

- If eight programmes have already been set using the ShowView system or the TIMER PROGRAMMING menu, "FULL" appears in the display window for about five seconds.
- The ⊕ indicator flashes in the display window when you complete the setting in step 9 with no tape inserted.
- If you set the clock using the Auto Clock Set function and AUTO CLOCK is set to ON, the clock will adjust itself to the incoming time signal regardless of adjustments made with the Dial Timer. Be sure you have set the Auto Clock Set correctly.
- When the time is set incorrectly, "ERROR" appears in the display window in step 9. Set the timer again from step 1.
- You cannot set the tape speed to AUTO using the Dial Timer. To select AUTO, set the tape speed in the TIMER PROGRAMMING menu (see page 61).

continued

About the Demonstration Mode

The Dial Timer function has a Demonstration Mode that allows the user, such as a salesperson, to enter more than eight examples of timer settings when demonstrating the use of the Dial Timer. It cancels the "FULL" notice which appears if eight programmes have already been set. Do not use the Demonstration Mode for making timer recordings. Doing so may cause the settings to be inaccurate.

To activate the Demonstration Mode

Press ▮▮ (pause) on the VCR while turning the ⊕ DIAL TIMER. "DEMO" appears in the display window for a few seconds.

To cancel the Demonstration Mode

Turn the power off and unplug the mains lead. Although the Demonstration Mode is cancelled, the timer settings entered while using the Demonstration Mode will remain. Be sure to manually cancel the timer settings before you use the Dial Timer or any other timer method after reconnecting the mains lead (see page 61).

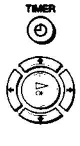
Recording TV programmes using the ShowView® system (SLV-SE820N, SE720N and SX720N only)

The ShowView system is the feature that simplifies programming the VCR to make timer recordings. Just enter the ShowView number listed in the TV programme guide. The date, times, and programme position of that programme are set automatically. You can preset a total of eight programmes, including settings made with other timer methods.

Before you start…

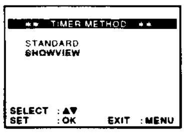
- Check that the VCR clock is set to the correct time and date.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- To record from a decoder, turn it on.
- Turn on your TV and set it to the video channel.
- Set TIMER METHOD to SHOWVIEW or VARIABLE in the EASY OPERATION menu (see page 71).
- Refer to "Index to parts and controls" for button locations.

1 TIMER



Press ⊕ TIMER.

- When you set TIMER METHOD to VARIABLE:
  The TIMER METHOD menu appears on the TV screen. Press ⬆/⬇ to select SHOWVIEW, then press OK.

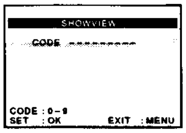


TIMER METHOD

STANDARD
SHOWVIEW

SELECT : ▲▼
SET : OK EXIT : MENU

- When you set TIMER METHOD to SHOWVIEW:
  The SHOWVIEW menu appears on the TV screen.



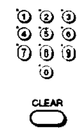
SHOWVIEW

CODE ---------

CODE : 0–9
SET : OK EXIT : MENU

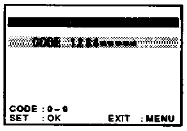
continued

2

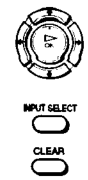


Press the programme number buttons to enter the ShowView number.

If you make a mistake, press CLEAR and re-enter the correct number.

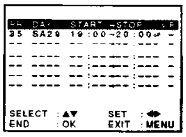

```
CODE :0-9
SET  :OK           EXIT  :MENU
```

3



Press OK.

The date, start and stop times, programme position, tape speed and VPS/PDC setting appear on the TV screen.

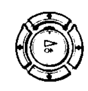

```
PR  DAY   START -STOP    V/P
35  SA29  19:00-20:00    -
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -

SELECT :▲▼       SET  :◀▶
END    :OK       EXIT :MENU
```

- If "– –" appears in the "PR" (programme) column (this may happen for local broadcasts), you have to set the appropriate programme position manually.
  Press ⬆/⬇ to select the desired programme position.
- To record from a decoder or other source connected to one or more of the LINE inputs, press INPUT SELECT to display the connected line in the "PR" position.

You will only have to do this operation once for the referred channel. The VCR will then store your setting.

If the information is incorrect, press CLEAR to cancel the setting.

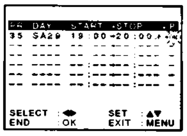
4



If you want to change the date, tape speed and the VPS/PDC setting:

1 Press ⬅/➡ to select the item you want to change.
2 Press ⬆/⬇ to reset it.

- To record the same programme every day or the same day every week, see "Daily/weekly recording" on page 53.
- To use the VPS/PDC function, set V/P to ON. For details about the VPS/PDC function, see "Timer recording with VPS/PDC signals" on page 53.


```
PR  DAY   START -STOP    V/P
35  SA29  19:00-20:00    ON
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -

SELECT :◀▶       SET  :▲▼
END    :OK       EXIT :MENU
```

5

Press MENU to exit the menu.

6

Press I/⏻ to turn off the VCR.

The ⊕ indicator appears in the display window and the VCR stands by for recording.

To record from a decoder or other source, leave the connected equipment switched on.

To stop recording

To stop the VCR while recording, press ■ (stop).

Daily/weekly recording

In step 4 above, press ⬇ to select the recording pattern. Each time you press ⬇, the indication changes as shown below. Press ⬆ to change the indication in reverse order.
today → DLY (Monday to Sunday) → W-SA (every Saturday) ..... → W-SU (every Sunday) → 1 month later → (dates count down) → today

Timer recording with VPS/PDC signals

Some broadcast systems transmit VPS (Video Programme System) or PDC (Programme Delivery Control) signals with their TV programmes. These signals ensure that your timer recordings are made regardless of broadcast delays, early starts, or broadcast interruptions.

To use the VPS/PDC function, set V/P to ON in step 4 above. You can also use the VPS/PDC function for a source connected to one or more of the LINE inputs.

To use the VCR after setting the timer

To use the VCR before a recording begins, just press I/⏻. The ⊕ indicator turns off and the VCR switches on. Remember to press I/⏻ to reset the VCR to recording standby after using the VCR.

You can also do the following tasks while the VCR is recording:

- Reset the counter (page 40).
- Display tape information on the TV screen (page 43).
- Check the timer settings (page 61).
- Watch another TV programme (page 43).

continued

To use the Auto Tape Speed function

In step 4 above, press ⬇ to select AUTO. When you are recording a programme in the SP mode and the remaining tape length becomes shorter than the recording time, the recording tape speed is automatically changed to the LP mode. Note that some noise will appear on the picture when the tape speed is changed. To operate this function correctly, the "TAPE SELECT" setting in the USER SET menu must be accurate (see page 70).

Tips

- To set the line input video source, you can also use the INPUT SELECT button.
- You can set the extended time for the ShowView setting by 10, 20, 30, 40, 50, or 60 minutes. Set SHOWVIEW EXTEND in the EASY OPERATION menu to the desired extended time on page 71.
- To check, change, or cancel the programme setting, see "Checking/changing/cancelling timer settings" on page 61.

Notes

- If the VPS/PDC signal is too weak or the broadcasting station failed to transmit VPS/PDC signals, the VCR will start recording at the set time without using the VPS/PDC function.
- The ⊕ and ◯◯ indicators flash in the display window when you press I/⏻ with no tape inserted.
- When you set TIMER METHOD to STANDARD in the EASY OPERATION menu, the SHOWVIEW menu does not appear on the TV screen. Select SHOWVIEW or VARIABLE.

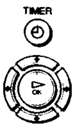
Recording TV programmes using the timer

You can preset a total of eight programmes, including settings made with other timer methods.

Before you start…

- Check that the VCR clock is set to the correct time and date.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- To record from a decoder, turn it on.
- Turn on your TV and set it to the video channel.
- Set TIMER METHOD* to STANDARD or VARIABLE in the EASY OPERATION menu (see page 71).
- Refer to "Index to parts and controls" for button locations.

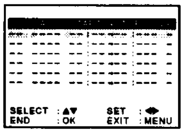
1



Press ⊕ TIMER.

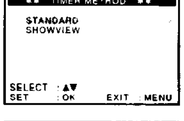
For SLV-SE620N and SE420K

The TIMER PROGRAMMING menu appears on the TV screen.

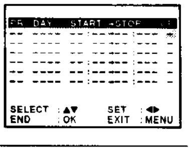

```
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -

SELECT :▲▼       SET  :◀▶
END    :OK       EXIT :MENU
```

For SLV-SE820N, SE720N and SX720N

- When you set TIMER METHOD to VARIABLE:
  The TIMER METHOD menu appears on the TV screen. Press ⬆/⬇ to select STANDARD, then press OK.


```
** TIMER METHOD **

STANDARD
SHOWVIEW

SELECT :▲▼
SET    :OK       EXIT :MENU
```

- When you set TIMER METHOD to STANDARD:
  The TIMER PROGRAMMING menu appears on the TV screen.

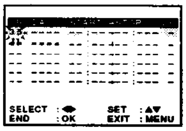

```
PR  DAY   START -STOP    V/P
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -
--  ----  --:-- --:--    -

SELECT :▲▼       SET  :◀▶
END    :OK       EXIT :MENU
```

continued

2

OK
INPUT SELECT

Set the date, start and stop times, programme position, tape speed and VPS/PDC function*:



1 Press ➡ to select each item in turn.

2 Press ⬆/⬇ to set each item.

To correct a setting, press ⬅ to return to that setting and reset.

- To record the same programme every day or the same day every week, see "Daily/weekly recording" on page 56.
- To use the VPS/PDC function*, set V/P to ON. For details about the VPS/PDC function, see "Timer recording with VPS/PDC signals" on page 53.
- To record from a decoder or other source connected to one or more of the LINE inputs, press INPUT SELECT to display the connected line in the "PR" position.

3

Press MENU to exit the menu.

4

Press I/⏻ to turn off the VCR.

The ⊕ indicator appears in the display window and the VCR stands by for recording.

To record from a decoder or other source, leave the connected equipment switched on.

To stop recording

To stop the VCR while recording, press ■ (stop).

Daily/weekly recording

In step 2 above, press ⬇ to select the recording pattern. Each time you press ⬇, the indication changes as shown below. Press ⬆ to change the indication in reverse order.

today → DLY (Monday to Sunday) → W-SA (every Saturday) ..... → W-SU (every Sunday) → 1 month later → (dates count down) → today

To use the VCR after setting the timer

To use the VCR before a recording begins, just press I/⏻. The ⊕ indicator turns off and the VCR switches on. Remember to press I/⏻ to reset the VCR to recording standby after using the VCR.

You can also do the following tasks while the VCR is recording:

- Reset the counter (page 40).
- Display tape information on the TV screen (page 43).
- Check the timer settings (page 61).
- Watch another TV programme (page 43).

To use the Auto Tape Speed function

In step 2 above, press ⬇ to select AUTO. When you are recording a programme in the SP mode and the remaining tape length becomes shorter than the recording time, the recording tape speed is automatically changed to the LP mode. Note that some noise will appear on the picture when the tape speed is changed. To operate this function correctly, the "TAPE SELECT" setting in the USER SET menu must be accurate (see page 70).

Tips

- To set the line input video source, you can also use the INPUT SELECT button.
- Even if you set TIMER METHOD* to SHOWVIEW in the EASY OPERATION menu, you can set the timer manually. Press MENU to select TIMER PROGRAMMING, then go to step 2.
- To check, change, or cancel the programme setting, see "Checking/changing/cancelling timer settings" on page 61.

Notes

- When setting the timer with VPS/PDC* signals, enter the start and stop times exactly as indicated in the TV programme guide. Otherwise, the VPS/PDC function will not work.
- If the VPS/PDC* signal is too weak or the broadcasting station failed to transmit VPS/PDC signals, the VCR will start recording at the set time without using the VPS/PDC function.
- The ⊕ and ♂ indicators flash in the display window when you press I/⏻ with no tape inserted.
- The VPS/PDC function* is automatically set to off for the timer recording of a satellite programme.

* not available on SLV-SE620N and SE420K

Additional Operations

Playing/searching at various speeds

Before you start...

- Refer to "Index to parts and controls" for button locations.

Playback options	Operation
View the picture during fast-forward or rewind	During fast-forward, hold down ▶▶ (fast-forward). During rewind, hold down ◀◀ (rewind).
Play at high speed	• During playback, press ▶▶ (fast-forward) or ◀◀ (rewind) on the remote commander. • During playback, hold down ▶▶ (fast-forward) or ◀◀ (rewind). When you release the button, normal playback resumes.
Play at twice the normal speed	During playback, press ×2.
Play in slow motion	During playback, press ▮▶ SLOW.
Play frame by frame	During pause, press ▶▶ (fast-forward) or ◀◀ (rewind)* on the remote commander.

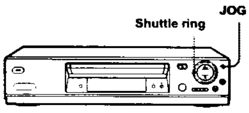
* SLV-SE820N only

To resume normal playback

Press ▷ (play).

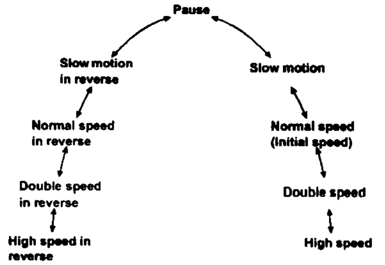
Using the shuttle ring (SLV-SE820N only)

With the shuttle ring, you can operate a variety of playback options. There are two ways for using the shuttle ring, normal mode and jog mode.



To use the shuttle ring in normal mode

During playback or pause, turn the shuttle ring clockwise or anticlockwise. Each change in the shuttle ring position changes the playback mode in the following way.



To use the shuttle ring in jog mode

Use this mode for frame-by-frame playback.

Press JOG to enter the jog mode. The JOG button lights up. If you change to the jog mode during any playback mode, playback pauses so you can see a still picture. Each change in the shuttle ring position shifts the picture one frame. To shift frames in reverse, turn the shuttle ring anticlockwise. The frame shift speed depends on the speed you turn the shuttle ring.

To resume normal mode, press JOG again. The JOG button turns off.

Tip

- Adjust the picture using the PROGRAM +/– buttons on the VCR if:
  - Streaks appear while playing in slow motion.
  - Bands appear at the top or bottom while pausing.
  - The picture shakes while pausing.

  To set tracking to the centre position, press both buttons (+/–) at the same time.

Notes

- The sound is muted during these operations.
- In the LP mode, noise may appear or there may be no colour.
- If the playback mode mark does not appear on the TV screen, press ⊕ DISPLAY.
- The picture may show noise when playing at high speed in reverse.
- The picture returns to normal playback from slow motion in reverse in 30 seconds.

Setting the recording duration time

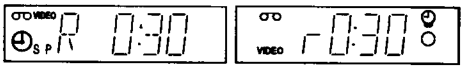
After you have started recording in the normal way, you can have the VCR stop recording automatically after a specified duration.

Before you start…

- Refer to "Index to parts and controls" for button locations.

1 While recording, press ● REC.

The ⊕ indicator appears in the display window.



2 Press ● REC repeatedly to set the duration time.

In SP mode

Each press advances the time in increments of 30 minutes.

→ 0:30 → 1:00 ----→ 4:00 → 4:30 → Normal recording

In LP mode

Each press advances the time as shown below.

→ 0:30 → 1:00 ----→ 8:00 → 9:00 → Normal recording

The tape counter decreases minute by minute to 0:00, then the VCR stops recording and turns off automatically.

To extend the duration

Press ● REC repeatedly to set a new duration time.

To cancel the duration

Press ● REC repeatedly until the ⊕ indicator disappears and the VCR returns to the normal recording mode.

To stop recording

To stop the VCR while recording, press ■ (stop).

Note

- You cannot display the current tape time in the display window when setting the recording duration time.

Checking/changing/cancelling timer settings

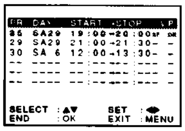
Before you start…

- Turn on your TV and set it to the video channel.
- Refer to "Index to parts and controls" for button locations.

1 Press I/⏻ to turn on the VCR.

2 Press MENU, then press ⬆/⬇ to highlight TIMER PROGRAMMING and press OK.

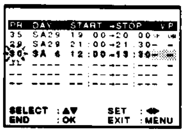
- If you want to change or cancel a setting, go on to the next step.
- If you do not need to change or cancel the settings, press MENU, then turn off the VCR to return to recording standby.



```
PR  DAY    START →STOP     VP
26  SA29   19:00→20:00SP   ON
29  SA29   21:00→21:30-    -
30  SA 6   12:00→13:30-    -
--  ----   --:--→--:---    -
--  ----   --:--→--:---    -
--  ----   --:--→--:---    -

SELECT  :▲▼       SET  :◀▶
END     :OK       EXIT :MENU
```

3 Press ⬆/⬇ to select the setting you want to change or cancel, then press ➡.

The PR number on the selected row flashes.



```
PR  DAY    START →STOP     VP
35  SA29   19:00→20:00SP   ON
29  SA29   21:00→21:30-    -
30  SA 6   12:00→13:30-    -
--  ----   --:--→--:---    -
--  ----   --:--→--:---    -
--  ----   --:--→--:---    -

SELECT  :▲▼       SET  :◀▶
END     :OK       EXIT :MENU
```

4 • To change the setting, press ⬅/➡ to select the item you want to change, then press ⬆/⬇ to reset it.
- To cancel the setting, press CLEAR.

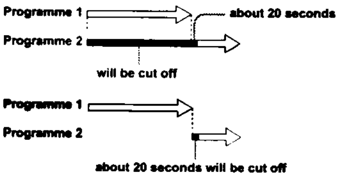
5 Press MENU to exit the menu.

If any settings remain, turn off the VCR to return to recording standby.

continued

When the timer settings overlap

The programme that starts first has priority and the second programme starts recording only after the first programme has finished. If the programmes start at the same time, the programme listed first in the menu has priority.



Recording stereo and bilingual programmes (not available on SLV-SE420K)

In the ZWEITON (German stereo) system

This VCR automatically receives and records stereo and bilingual programmes based on the ZWEITON system. When a stereo or bilingual programme is received, the STEREO indicator appears in the display window.

To select bilingual sound while recording

Press AUDIO MONITOR to select the sound you want.

To listen to	On-screen display	Display window
Main	MAIN	STEREO
Sub	SUB	STEREO
Main and sub	MAIN/SUB	STEREO
Standard sound*	MONO	STEREO

* Usually the main channel heard from both the left and right in bilingual programmes

To select stereo programme while recording

To listen to	On-screen display	Display window
Stereo	STEREO	STEREO
Left channel	LCH	STEREO
Right channel	RCH	STEREO
Standard sound	LCH + RCH	STEREO

* Usually the mixed sound of left and right channels in stereo programmes

continued

In the NICAM system

This VCR receives and records stereo and bilingual programmes based on the NICAM system (NICAM appears on the TV screen). When a stereo or bilingual programme is received, the STEREO indicator appears in the display window.

To record a NICAM programme, NICAM in the USER SET menu should be set to ON (initial setting). To check the menu setting, see page 71 for details.

To select the sound while recording

Press AUDIO MONITOR to select the sound you want.

Stereo programmes

To listen to	On-screen display	Display window
Stereo	NICAM, STEREO	STEREO
Left channel	NICAM, LCH	STEREO
Right channel	NICAM, RCH	STEREO
Left and right channels*	NICAM, LCH + RCH	STEREO

* Usually the mixed sound of left and right channels

Bilingual programmes

To listen to	On-screen display	Display window
Main	NICAM, MAIN	STEREO
Sub	NICAM, SUB	STEREO
Main and sub	NICAM, MAIN/SUB	STEREO
Standard sound*	NICAM, MONO	STEREO

* Usually the main sound (monaural)

Selecting the sound during Hi-fi playback

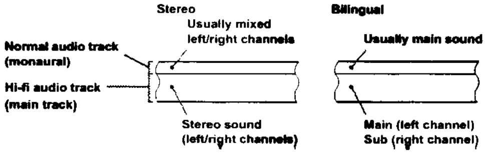
Press AUDIO MONITOR to select the sound you want.

To listen to	On-screen display	Display window
Stereo	STEREO	STEREO
Left channel	LCH	STEREO
Right channel	RCH	STEREO
Mix sound*	MIX	STEREO
Mono sound	MONO	No indicator

* The mixed sound of left and right channels, and the normal mono audio track

How sound is recorded on a video tape

The VCR records sound onto two separate tracks. **Hi-fi audio is recorded onto the main track along with the picture. Monaural sound is recorded onto the normal audio track along the edge of the tape.**


Stereo
Bilingual
Usually mixed left/right channels
Usually main sound
Normal audio track (monaural)
Hi-fi audio track (main track)
Stereo sound (left/right channels)
Main (left channel)
Sub (right channel)

Notes

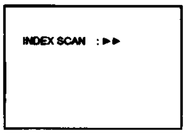
- **To listen to playback sounds in stereo, you must use the Scart or AUDIO OUT** connections.
- When you play a tape recorded in monaural, **the sound is heard in monaural** regardless of the AUDIO MONITOR setting.

Searching using the index function (not available on SLV-SE420K)

The VCR automatically marks the tape with an index signal at the point where each recording begins. Use these signals as references to find a specific recording.

To find a specific recording by scanning (Index scan)

1. Insert an indexed tape into the VCR.
2. Press ⏮/⏭ (index search). The VCR starts scanning each recording for five seconds in the corresponding direction.

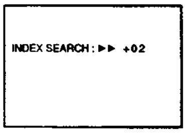


INDEX SCAN : ▶▶

3. Press ▷ (play) to start playback when you find the desired point.

To search a specific recording (Index search)

1. Insert an indexed tape into the VCR.
2. Press ⏮/⏭ (index search) twice.
   - To search ahead, press ⏭ (index search) twice.
   - To search backwards, press ⏮ (index search) twice.



INDEX SEARCH : ▶▶ +02

3. Press ⏮/⏭ (index search) depending on the direction where your desired programme is located.

   Each time you press the button, the number increases or decreases up to ±20, respectively.
4. The VCR starts searching, and playback starts automatically from that point.

To stop searching

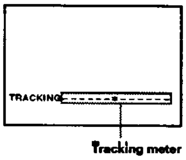
Press ■ (stop).

Notes

- No index signal will be added when recording starts from recording pause. However, an index signal will be marked if you change the programme position during recording pause.
- When you press ⏮ (index search), if there is nothing recorded before the selected index signal, playback may not start exactly at the index signal.

Adjusting the picture

Adjusting the tracking



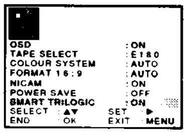
Although the VCR automatically adjusts the tracking when playing a tape, distortion may occur if the recording is in poor condition. In this case, manually adjust the tracking.

During playback, press PROGRAM +/– <u>on the VCR</u> to display the tracking meter. The distortion should disappear as you press one of the two buttons. To resume automatic tracking adjustments, eject the tape and re-insert it.

Adjusting the picture sharpness (Smart trilogic)

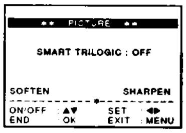
You can automatically adjust the sharpness of the picture.

1. During playback, press MENU, then press ⬆/⬇/⬅/➡ to highlight USER SET and press OK.
2. Press ⬆/⬇ to highlight SMART TRILOGIC, then press ➡.



```
OSD               : ON
TAPE SELECT       : E180
COLOUR SYSTEM     : AUTO
FORMAT 16:9       : AUTO
NICAM             : ON
POWER SAVE        : OFF
SMART TRILOGIC    : ON
SELECT  : ▲▼      SET  : ▶
END     : OK      EXIT : MENU
```

3. Press ⬆/⬇ to set SMART TRILOGIC to ON or OFF.
   - ON: Picture sharpness is automatically adjusted.
   - OFF: Adjust the picture sharpness manually.
     To soften the picture, press ⬅.
     To sharpen the picture, press ➡.



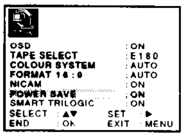
```
** PICTURE **

SMART TRILOGIC : OFF

SOFTEN                 SHARPEN
-----------*----------
ON/OFF  : ▲▼      SET  : ◀▶
END     : OK      EXIT : MENU
```

4. Press MENU to return to the original screen.

Reducing the VCR's power consumption

You can turn off the indicators in the display window when the VCR is off (standby mode) to reduce the VCR's power consumption.

1. Press MENU, then press ⬆/⬇/⬅/➡ to highlight USER SET and press OK.
2. Press ⬆/⬇ to highlight POWER SAVE.
3. Press ➡ to set to ON, then press OK.
   The power consumption is reduced to a minimum.



```
OSD               : ON
TAPE SELECT       : E180
COLOUR SYSTEM     : AUTO
FORMAT 16:9       : AUTO
NICAM             : ON
POWER SAVE        : ON
SMART TRILOGIC    : ON
SELECT  : ▲▼      SET  : ▶
END     : OK      EXIT : MENU
```

To turn on the indicators in the display window

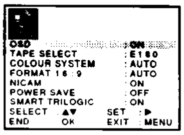
Set POWER SAVE to OFF in step 3.

Notes

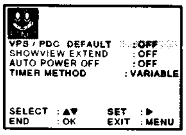
- When the VCR stands by for recording, the ⏻ indicator in the display window remain lit even when POWER SAVE is set to ON.
- The Line Through function will not operate properly if POWER SAVE is set to ON. Set POWER SAVE to OFF to ensure proper operation.

Changing menu options

1. Press MENU, then select USER SET or EASY OPERATION and press OK.



```
OSD               : ON
TAPE SELECT       : E180
COLOUR SYSTEM     : AUTO
FORMAT 16:9       : AUTO
NICAM             : ON
POWER SAVE        : OFF
SMART TRILOGIC    : ON
SELECT  : ▲▼      SET  : ▶
END     : OK      EXIT : MENU
```



```
VPS / PDC DEFAULT     : OFF
SHOWVIEW EXTEND       : OFF
AUTO POWER OFF        : OFF
TIMER METHOD          : VARIABLE


SELECT  : ▲▼      SET  : ▶
END     : OK      EXIT : MENU
```

2. Press ⬆/⬇ to select the option.
3. Press ➡ to change the setting, then press OK.

Menu choices

Initial settings are indicated in bold print.

USER SET

Menu option	Set this option to
OSD	• **ON** to display the menu on the TV screen. • OFF to disappear the menu from the TV screen.
TAPE SELECT	• **E180** to use an E-180 or shorter type tape. • E240 to use an E-240 type tape. • E260 to use an E-260 type tape. • E300 to use an E-300 type tape.
COLOUR SYSTEM	• **AUTO** to set the colour system automatically. • PAL to play back a tape recorded in the PAL colour system. • MESECAM to play back a tape recorded in the MESECAM colour system. If you press ⏏ (eject) or turn the VCR off, COLOUR SYSTEM will be reset to AUTO.
FORMAT 16:9*1	• **AUTO** when you use a wide screen TV. The VCR automatically detects if programmes being played back or recorded are in normal or wide screen format. • ON if the VCR cannot detect wide screen TV programmes with AUTO. The VCR always plays back and records in wide screen format. • OFF if you are not using a wide screen TV.

Menu option	Set this option to
NICAM*	• **ON** to record NICAM broadcasts on the hi-fi audio track. • OFF to record standard sound on the hi-fi audio track. For details, see page 63.
POWER SAVE	• ON to turn off the indicators in the display window to conserve the VCR's power. • **OFF** to turn on the indicators in the display window while the VCR is standing by.
SMART TRILOGIC	• **ON** to automatically adjust the sharpness of the picture. • OFF to manually adjust the sharpness of the picture.

EASY OPERATION

Menu option	Set this option to
VPS/PDC DEFAULT*	• **OFF** to deactivate the VPS/PDC function. • ON to activate it.
SHOWVIEW EXTEND*	• **OFF** to deactivate the ShowView Extend function. • 10/20/30 … 60 (minutes) to extend the time of the ShowView setting by the selected amount of time.
AUTO POWER OFF	• **OFF** to deactivate the Auto Power Off function. • 2HOUR/3HOUR to turn the VCR off automatically if no signal is received and you do not press any of the buttons during this time.
TIMER METHOD*	• **VARIABLE** to display the TIMER METHOD menu for selecting STANDARD or SHOWVIEW when pressing the ⏻ TIMER button. • STANDARD to display the TIMER PROGRAMMING menu when pressing the ⏻ TIMER button. • SHOWVIEW to display the SHOWVIEW menu when pressing the ⏻ TIMER button. For details, see pages 51 and 55.

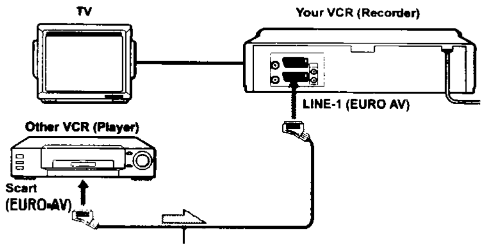
*1 not available on SLV-SE620N
*2 not available on SLV-SE420K
*3 not available on SLV-SE620N and SE420K

Connecting to a VCR or stereo system

How to connect to record on this VCR

Connect the line outputs of the other VCR to the input connector of this VCR. Refer to the examples A through C and choose the connection that best suits your VCR.

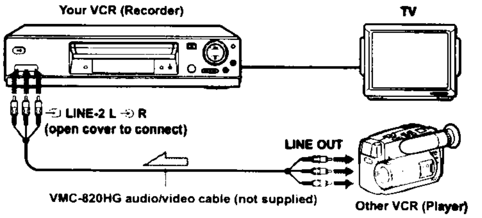
Example A



VMC-2121HG Scart cable (not supplied)

⇨ : **Signal flow**

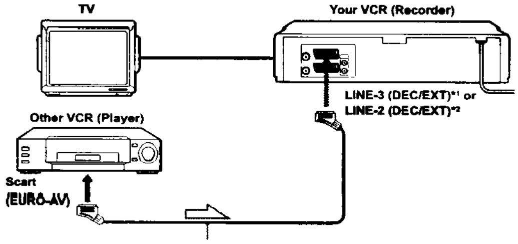
Example B (SLV-SE820N only)



VMC-820HG audio/video cable (not supplied)

⇨ : **Signal flow**

Example C



VMC-2121HG Scart cable (not supplied)

⇨ : **Signal flow**

How to connect to a stereo system (SLV-SE820N only)

Connect the ⊸ LINE-2 L ⊸ R jacks on this VCR to the audio output jacks on the stereo system, using the RK-C510HG audio cable (not supplied).

Notes

- Make sure you connect the plugs to jacks of the same colour.
- If the other VCR is a monaural type, leave the red plugs unconnected.
- If you connect this VCR to both the LINE IN and LINE OUT jacks of the other VCR, select the input correctly to prevent a humming noise.
- If the other VCR does not have a Scart (EURO-AV) connector, use the VMC-2106HG cable instead and connect the cable to the line out jacks of the other VCR.
- When you connect another VCR to the LINE-3 (DEC/EXT)*1 or LINE-2 (DEC/EXT)*2 connector, press INPUT SELECT to display "L3"*1 or "L2"*2 in the display window.

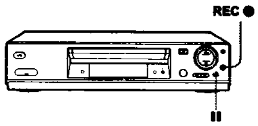
*1 SLV-SE820N only
*2 SLV-SE720N, SX720N and SE420K only

Basic editing

When recording on this VCR

Before you start editing

- Turn on your TV and set it to the video channel.
- Press INPUT SELECT to display the connected line in the display window.
- Press SP/LP to select the tape speed, SP or LP.



1. **Insert a source tape with its safety tab removed into the other (playback)** VCR. Search for the point to start playback and set it to playback pause.
2. Insert a tape with its safety tab in place into this (recording) VCR. Search for the point to start recording and press ❚❚ (pause) to set it to playback pause.
3. Press REC ● **on this VCR to set it to recording pause.**
4. **To start editing, press the ❚❚ (pause) buttons on both VCRs at the same** time.

To stop editing

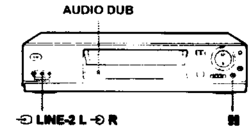
Press the ■ (stop) **buttons on both VCRs.**

Tip

- **To cut out unwanted scenes while editing, press ❚❚ (pause) on this VCR when an unwanted scene begins. When it ends, press ❚❚ (pause) again to resume recording.**

Audio dubbing (SLV-SE820N only)

This feature lets you record over the normal audio track. The monaural sound previously recorded is replaced while the original hi-fi sound remains unchanged. Use this feature to add commentary to a tape that you have recorded with a camcorder.



Before you start...

- Open the ⊸ LINE-2 L ⊸ R **jacks cover on the front panel and connect a playback** source.
- Turn on the TV and set it to the video channel.

1. Insert a source tape into your stereo system (or the playback VCR). Search for the point to start playback and set it to playback pause.
2. Insert a prerecorded tape with its safety tab in place into this (recording) VCR. **Search for the start of the section to be replaced and press ❚❚** (pause).

   The VCR enters pause mode.
3. Press AUDIO DUB.

   "A_DUB" and the indicator appears in the display window.
4. To start editing, press the ❚❚ (pause) buttons on this VCR and the **stereo** system (or other VCR) at the same time.

   After you use **this feature, the audio in playback mode is automatically** set to monaural.

To stop editing

Press ■ (stop) **on this VCR and the stereo system (or other VCR).**

Troubleshooting

If you have any questions or problems not covered below, please consult your nearest Sony service facility.

	Symptom	Remedy
Power	The I/⏻ (on/standby) switch does not function.	• Connect the mains lead to the mains securely.
	The power is turned on but the VCR does not operate.	• Moisture condensation has occurred. Turn the power off, unplug the mains lead and leave the VCR to dry for over three hours.
	The VCR is plugged in but the display window remains dark.	• Set POWER SAVE in the USER SET menu to OFF (see page 69).
Clock	The clock has stopped and “--:--” appears in the display window.	• The clock stops if the VCR is disconnected from the mains. Reset the clock (and timer).
	The playback picture does not appear on the TV screen.	• Make sure the TV is set to the video channel. If you are using a monitor, set it to video input. • If the VCR is connected to the TV with the Scart cable, make sure the VIDEO indicator is lit in the display window. Use the TV/VIDEO button on the remote commander to light up the VIDEO indicator.
	The picture is not clear.	• Existing broadcasts may interfere with the VCR. Reset the RF channel output of your VCR (see page 22). • Adjust the tracking with the PROGRAM +/– buttons on the VCR. • The video heads are dirty (see the last page of Troubleshooting). Clean the video heads using the Sony T-25CLD, E-25CLDR, or T-25CLW video head cleaning cassette. If these cleaning cassettes are not available in your area, have the heads cleaned at your nearest Sony service facility (a standard service charge will be required). Do not use a commercially available liquid type cleaning cassette other than Sony's, as it may damage the video heads. • The video heads may have to be replaced. Consult your local Sony service facility for more information.
	The picture has no colour.	• The COLOUR SYSTEM option in the USER SET menu is set to the wrong position. Set the option to conform to the system that the tape was recorded in.
	The picture rolls vertically during picture search.	• Adjust the vertical hold control on the TV or monitor.

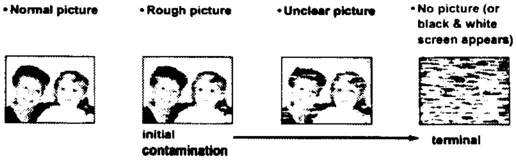
	Symptom	Remedy
Playback	The picture has no sound.	• The tape is defective. • If you made A/V connections, check the audio cable connection.
	The sound from a tape recorded with the VCR is not in stereo or the STEREO indicator in the display window is flashing.	• Adjust the tracking. • The video heads are dirty. Clean the video heads using the Sony T-25CLD, E-25CLDR, or T-25CLW video head cleaning cassette as explained above.
Recording	No TV programme appears on the TV screen.	• Make sure the TV is set to the video channel. If you are using a monitor, set it to video input. • Existing broadcasts may interfere with the VCR. Reset the RF channel output of your VCR (see page 22). • Select the correct source with the INPUT SELECT button. Select a programme position when recording TV programmes; select a line input when recording from other equipment.
	TV reception is poor.	• Make sure the aerial cable is connected securely. • Adjust the TV aerial. • Make sure the TV system is correctly set for your TV. • Make sure TV SYSTEM (B/G or D/K) in the INSTALLATION menu is set to the same system in your local area.
	The tape starts playing as soon as it is inserted.	• The safety tab has been removed. To record on this tape, cover the tab hole (see page 44).
	The tape is ejected when you press ● REC.	• The safety tab has been removed. To record on this tape, cover the tab hole (see page 44).
	Nothing happens when you press ● REC.	• Make sure the tape is not at its end.
Timer recording	The timer does not operate.	• Check that the clock is set. • Make sure a tape has been inserted. • Check that the safety tab has not been removed. • Make sure the tape is not at its end. • Make sure a programme has been set for timer recording. • Make sure your timer settings are past the current time. • Check that the decoder is turned on. • Check that the satellite tuner is turned on. • The clock stops if the VCR is disconnected from the mains. Reset the clock and timer. • Turn the power off and unplug the mains lead.

continued

	Symptom	Remedy
Timer recording	The SHOWVIEW menu or the TIMER PROGRAMMING menu does not appear.	• Check that TIMER METHOD in the EASY OPERATION menu is set correctly (see page 71).
	The VPS/PDC function does not operate properly.	• Check that the clock and the date are set correctly. • Check that the VPS/PDC time you set is the correct one (there might be a mistake in the TV programme guide). If the broadcast you wanted to record did not send the good VPS/PDC information, the VCR will not start recording. • If the reception is poor, the VPS/PDC signal might be altered and the VCR might not start recording.
Canal Plus	You cannot watch Canal Plus programmes when the VCR is in standby mode.	• Check that DEC is set to ON for this channel in the TV STATION TABLE menu. • Make sure the Canal Plus Scart cable is plugged securely.
	A Canal Plus programme is always recorded scrambled.	• Make sure the Canal Plus Scart cable is plugged securely. • Check that DEC is set to ON for this channel in the TV STATION TABLE menu.
Others	A tape cannot be inserted.	• Check that a tape is not already in the tape compartment.
	The remote commander does not function.	• Make sure you are pointing the remote commander at the remote sensor on the VCR. • Replace all the batteries in the remote commander with new ones if they are weak. • Make sure the [TV] / [VIDEO] remote control switch is set correctly.
	The selected input line connector number does not appear in the display window.	• Press INPUT SELECT to display the connected line.
	The tracking meter does not appear on the TV screen.	• The recording condition of the tape is very poor and tracking cannot be adjusted.
	You cannot control other TVs.	• Set your TV's code number. The code number may change when you replace the batteries of the remote commander.
	The display window becomes dim.	• The display window automatically becomes dim when the VCR is in standby or timer recording mode.
	The VCR needs to be cleaned.	• Clean the cabinet, panel and controls with a dry, soft cloth, or a soft cloth slightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine.

	Symptom	Remedy
Others	The Line Through function does not operate.	• Set POWER SAVE in the USER SET menu to OFF (see page 69).

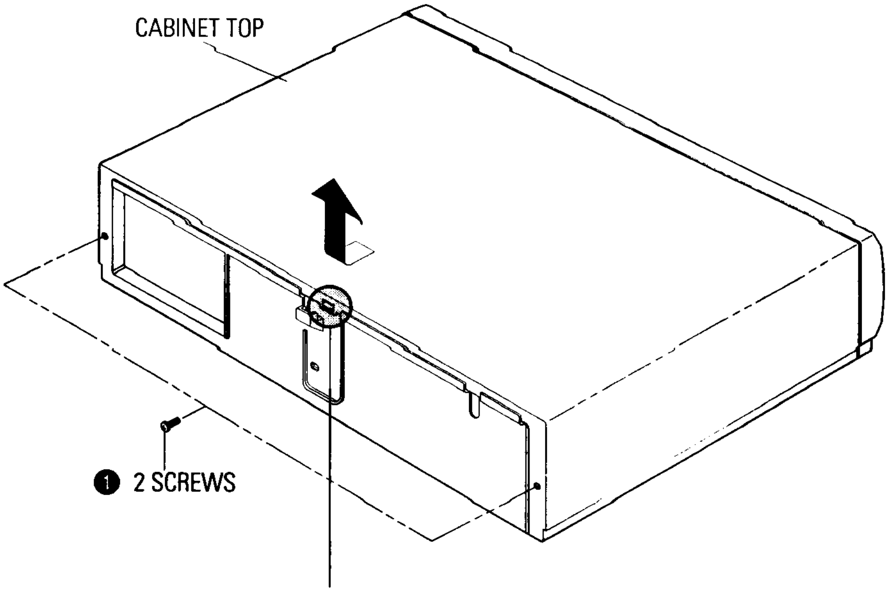
Symptoms caused by contaminated video heads



2. Disassembly

2-1 Mono Models

2-1-1 Cabinet Top

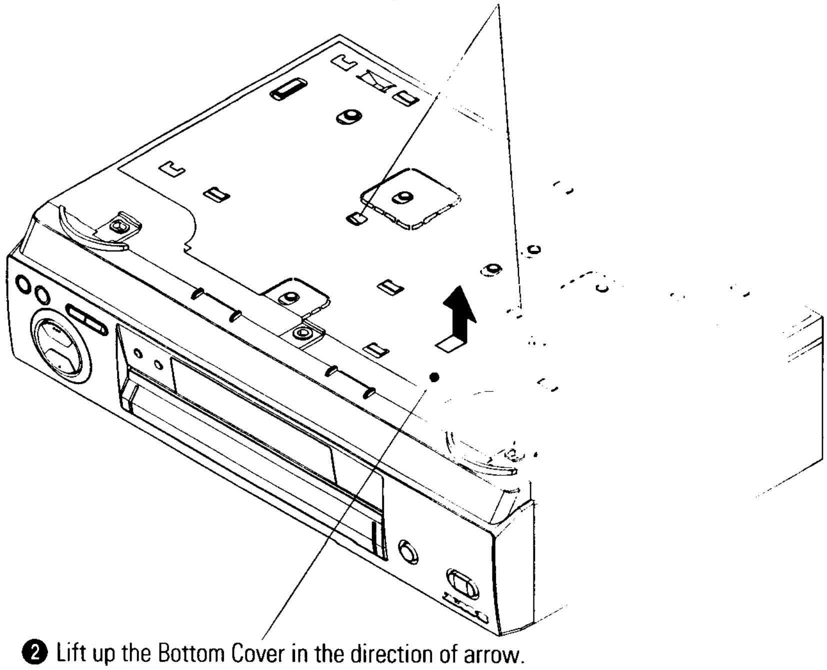

CABINET TOP
❶ 2 SCREWS

❷ Lift up the Cabinet Top in the direction of arrow by releasing the Hook.

Fig. 2-1 Cabinet Top

2-1-2 Cover Bottom

❶ RELEASE 2 SNAPFITS



❷ Lift up the Bottom Cover in the direction of arrow.

Fig. 2-2 Cover Bottom

2-1-3 Ass'y-Panel Front

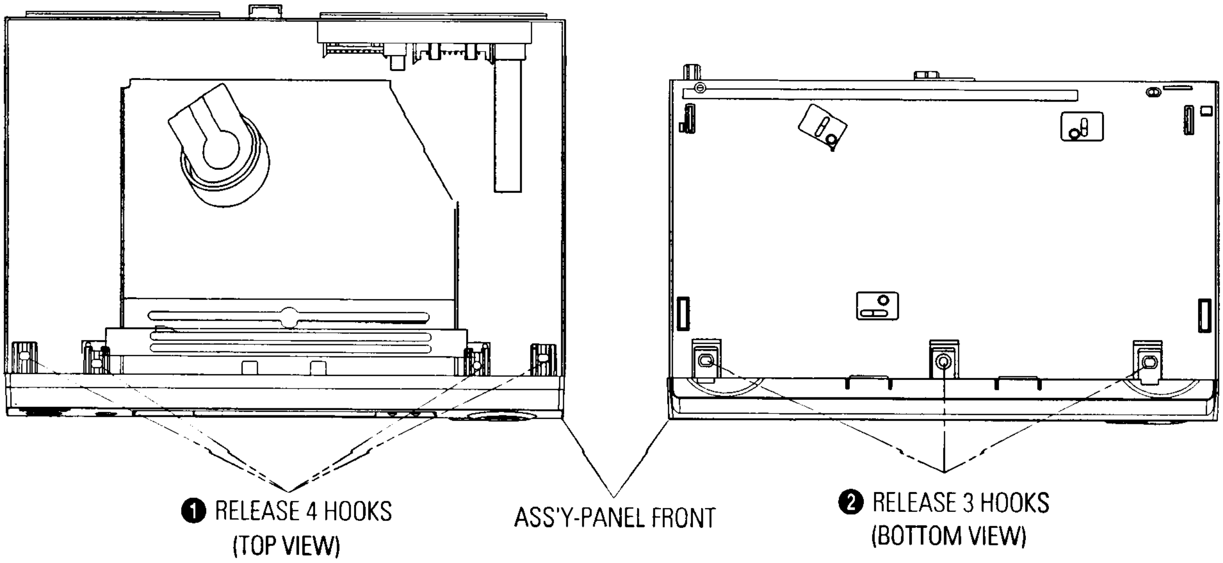
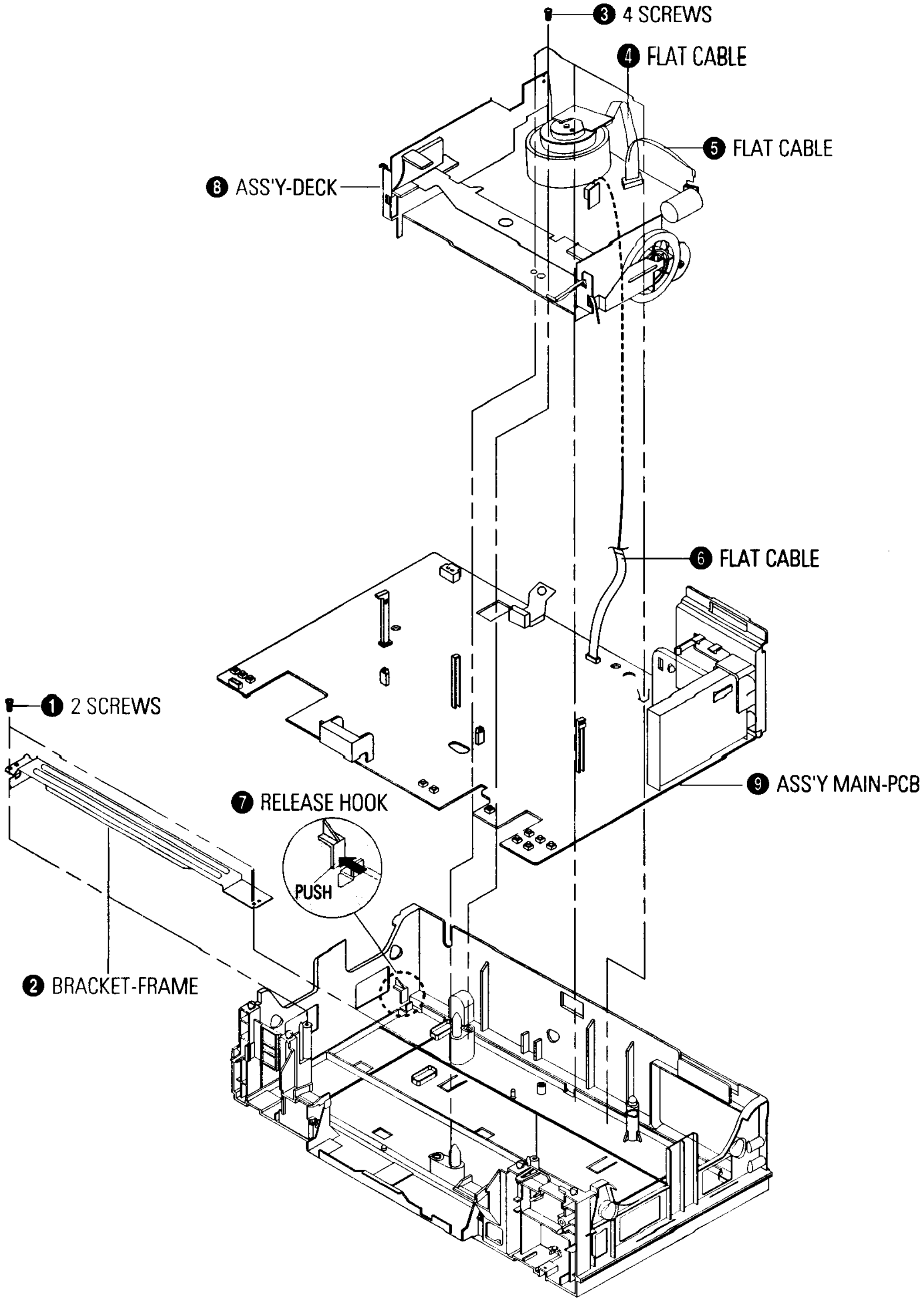

❶ RELEASE 4 HOOKS
(TOP VIEW)
ASS'Y-PANEL FRONT
❷ RELEASE 3 HOOKS
(BOTTOM VIEW)

Fig. 2-3 Ass'y-Panel Front

2-1-4 Ass'y MAIN-PCB, DECK

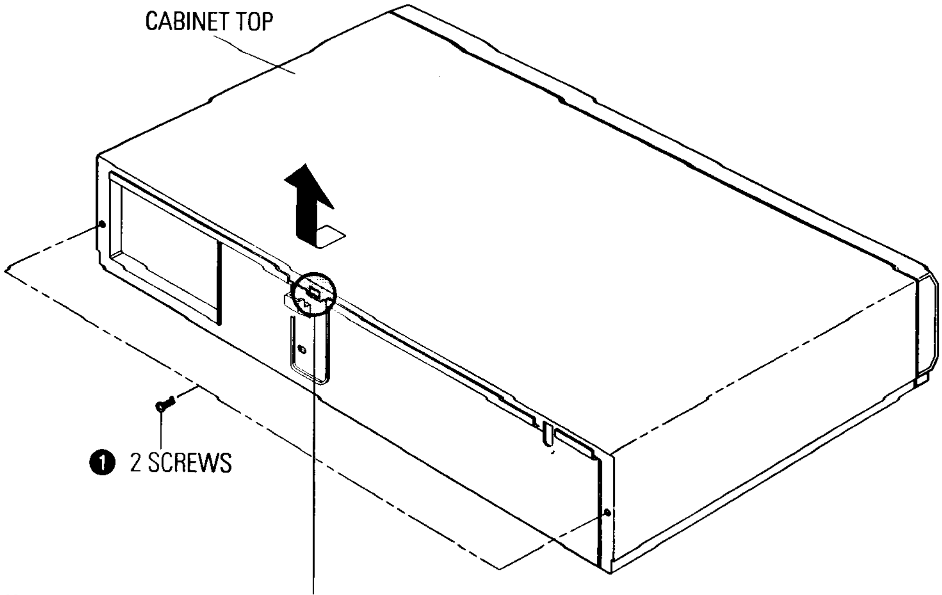


❸ 4 SCREWS
❹ FLAT CABLE
❺ FLAT CABLE
❽ ASS'Y-DECK
❻ FLAT CABLE
❶ 2 SCREWS
❾ ASS'Y MAIN-PCB
❼ RELEASE HOOK
PUSH
❷ BRACKET-FRAME

Fig. 2-4 Ass'y Main-PCB, Deck

2-2 Hi-Fi Models

2-2-1 Cabinet Top

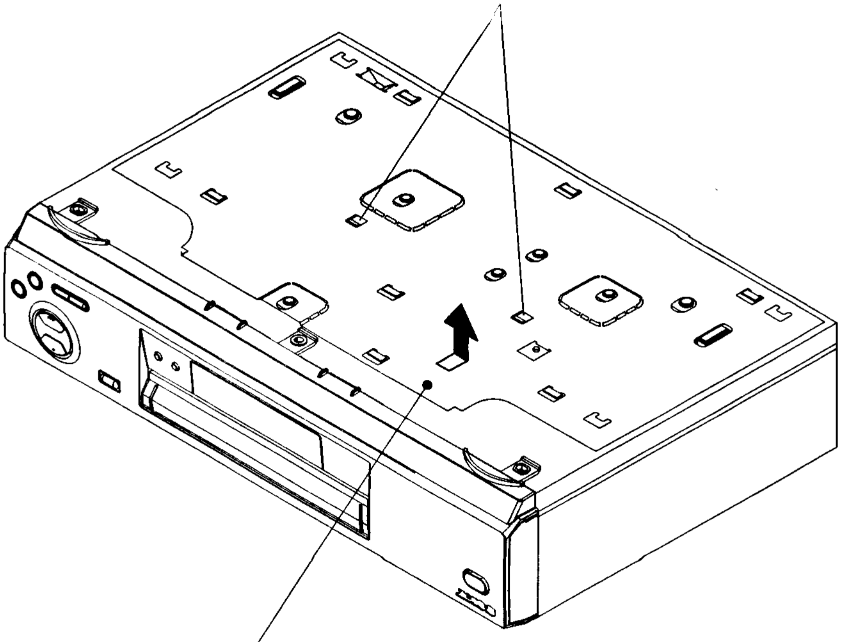


❷ Lift up the Cabinet Top in the direction of arrow by releasing the Hook.

Fig. 2-5 Cabinet Top

2-2-2 Cover Bottom

❶ RELEASE 2 SNAPFITS



❷ Lift up the Bottom Cover in the direction of arrow.

Fig. 2-6 Cover Bottom

2-2-3 Ass'y-Panel Front

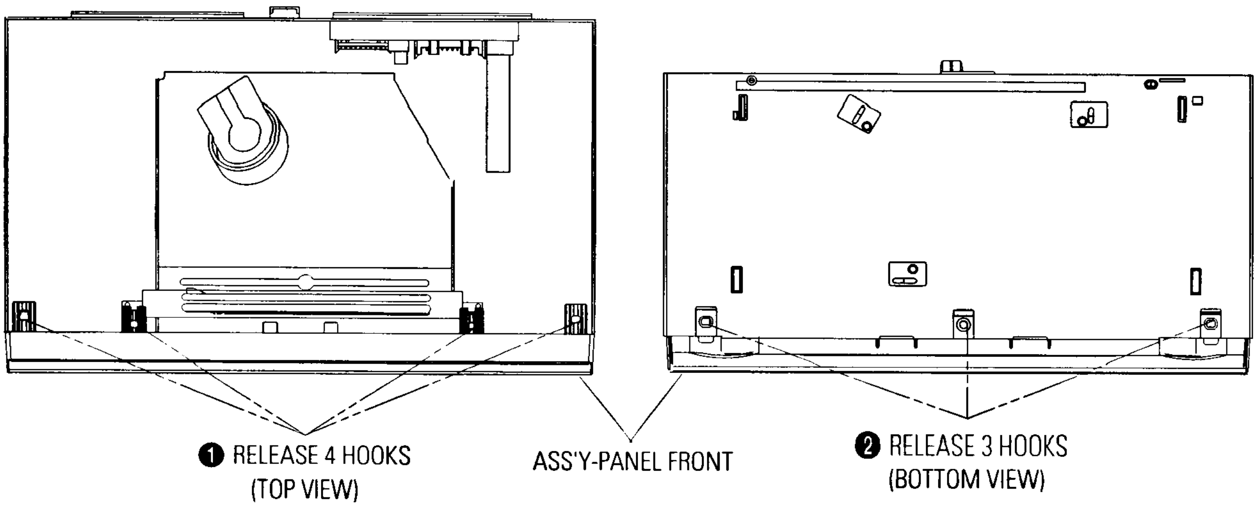

❶ RELEASE 4 HOOKS
(TOP VIEW)
ASS'Y-PANEL FRONT
❷ RELEASE 3 HOOKS
(BOTTOM VIEW)

Fig. 2-7 Ass'y-Panel Front

2-2-4 Ass'y Jack PCB

Disconnect the CN701 from the Ass'y PCB-Main and then lift the Ass'y PCB-Jack up.

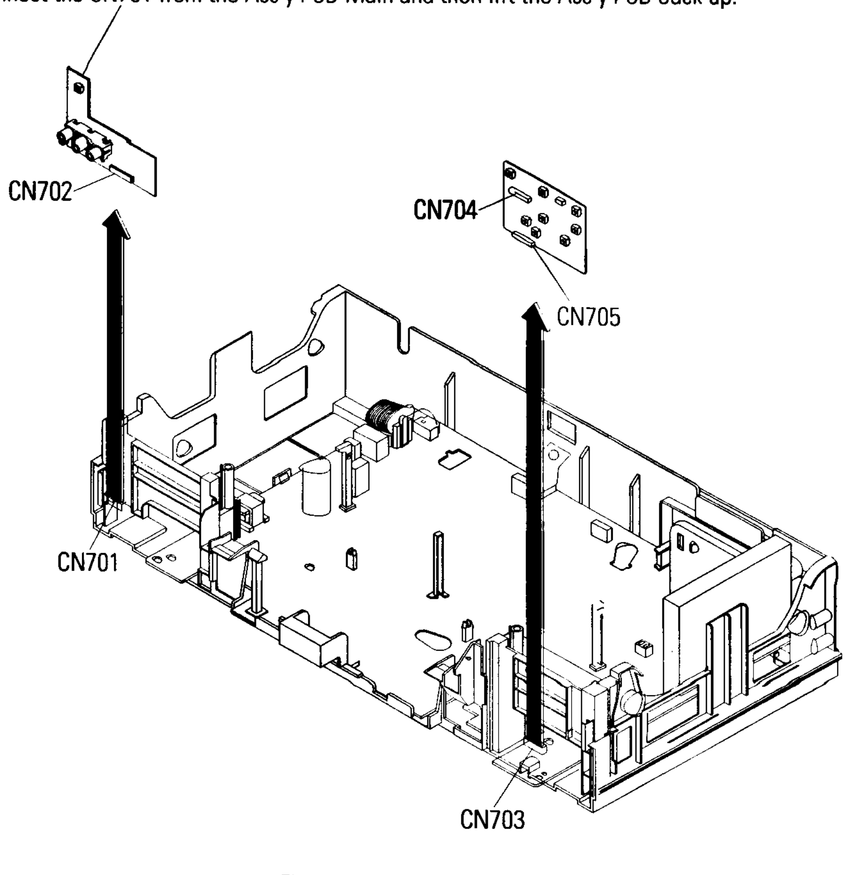

CN702
CN704
CN705
CN701
CN703

Fig. 2-8 Ass'y Jack-PCB

2-2-5 Ass'y MAIN-PCB, DECK

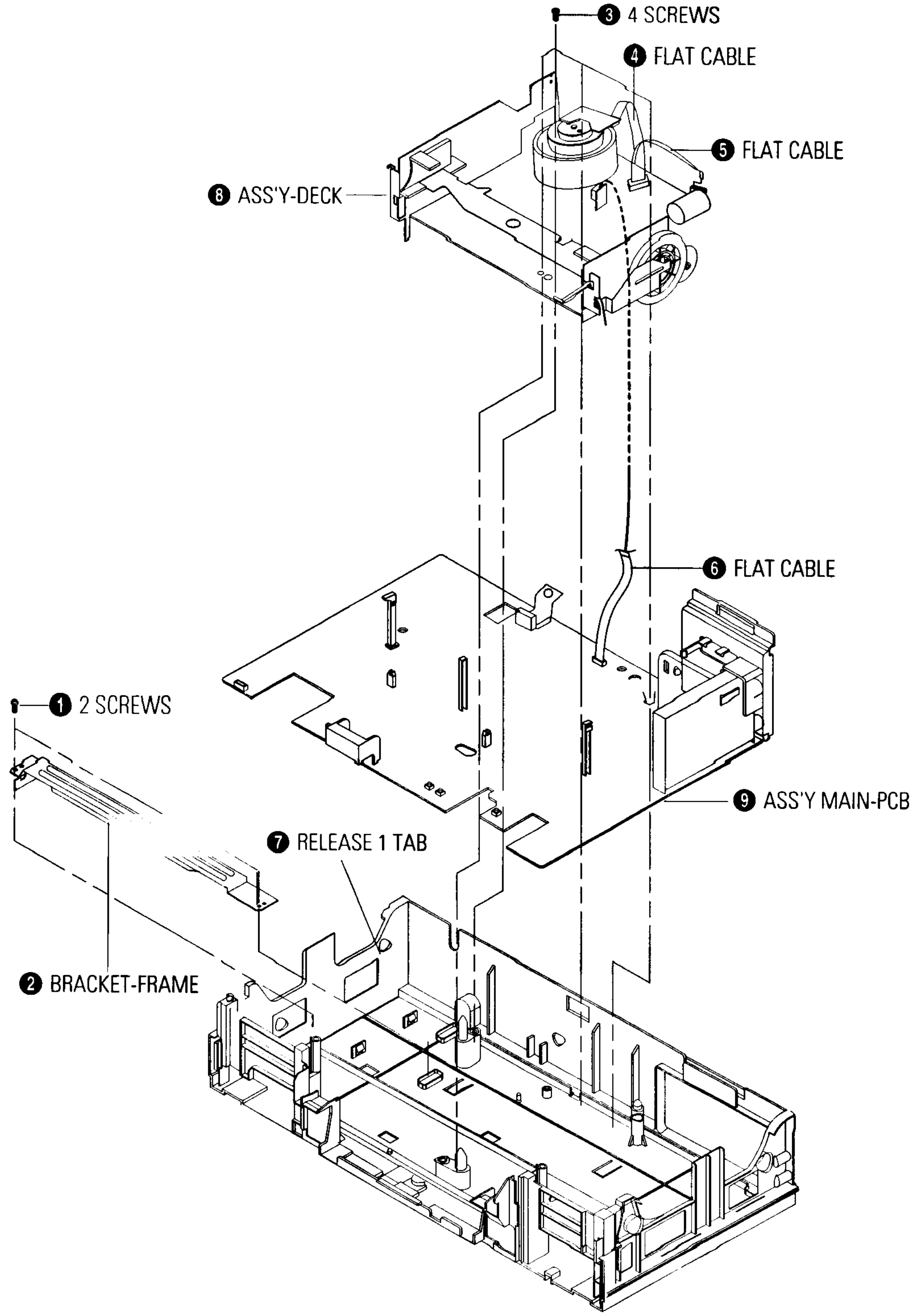

③ 4 SCREWS
④ FLAT CABLE
⑤ FLAT CABLE
⑧ ASS'Y-DECK
⑥ FLAT CABLE
① 2 SCREWS
⑨ ASS'Y MAIN-PCB
⑦ RELEASE 1 TAB
② BRACKET-FRAME

Fig. 2-9 Ass'y Main-PCB, Deck

4. Schematic Diagrams

◆ Block Identification of Main PCB ---------------------------------- 4-3

4-1 S.M.P.S. (A) (SLV-SE220/SE420/SE620) ---------------------------------- 4-5

4-2 S.M.P.S. (B) (SLV-SE720/SE727/SE820/SX720/SX727) ------------------ 4-7

4-3 Power (A) (SLV-SE220/SE420/SE620) ---------------------------------- 4-9

4-4 Power (B) (SLV-SE720/SE727/SE820/SX720/SX727) ------------------ 4-11

4-5 System Control/Servo (A) (SLV-SE220/SE420/SE620) ------------------ 4-13

4-6 System Control/Servo (B) (SLV-SE720/SE727/SE820/SX720/SX727)--------- 4-15

4-7 Audio/Video ---------------------------------- 4-17

4-8 Hi-Fi (Option) (SLV-SE620/SE720/SE727/SE820/SX720/SX727) ------------ 4-19

4-9 TM-Block ---------------------------------- 4-21

4-10 OSD/VPS/PDC (A)---------------------------------- 4-23

4-11 OSD/VPS/PDC (B) (SLV-SE620/SE720/SE727/SE820/SX720/SX727) -------- 4-25

4-12 SECAM; SLV-SE220B/SE620B/SE720B/SE820B Only --------------------- 4-27

4-13 A2/NICAM; Hi-Fi Models Only ---------------------------------- 4-29

4-14 Input-Output (2 Scart Jack)---------------------------------- 4-31

4-15 Input-Output (1 Scart Jack); SLV-SE620D/SE620N Only ----------------- 4-33

4-16 Sub---------------------------------- 4-35

◆ Waveform---------------------------------- 4-37

◆ Voltage Table ---------------------------------- 4-39

◆ **A Models**
SLV-SE220D/SE220I/SE220G/SE220B/SE420K/SE620D/SE620E/SE620B/SE620N

◆ **B Models**
SLV-SE720D/SX720D/SE720E/SX720E/SE720G/SE720I/SE720B/SX727D/SE727E/SE720N/
SX720N/SE820D/SE820E/SE820G/SE820B/SE820N)

1

3

5

7

9

1

3

5

7

9

1

3

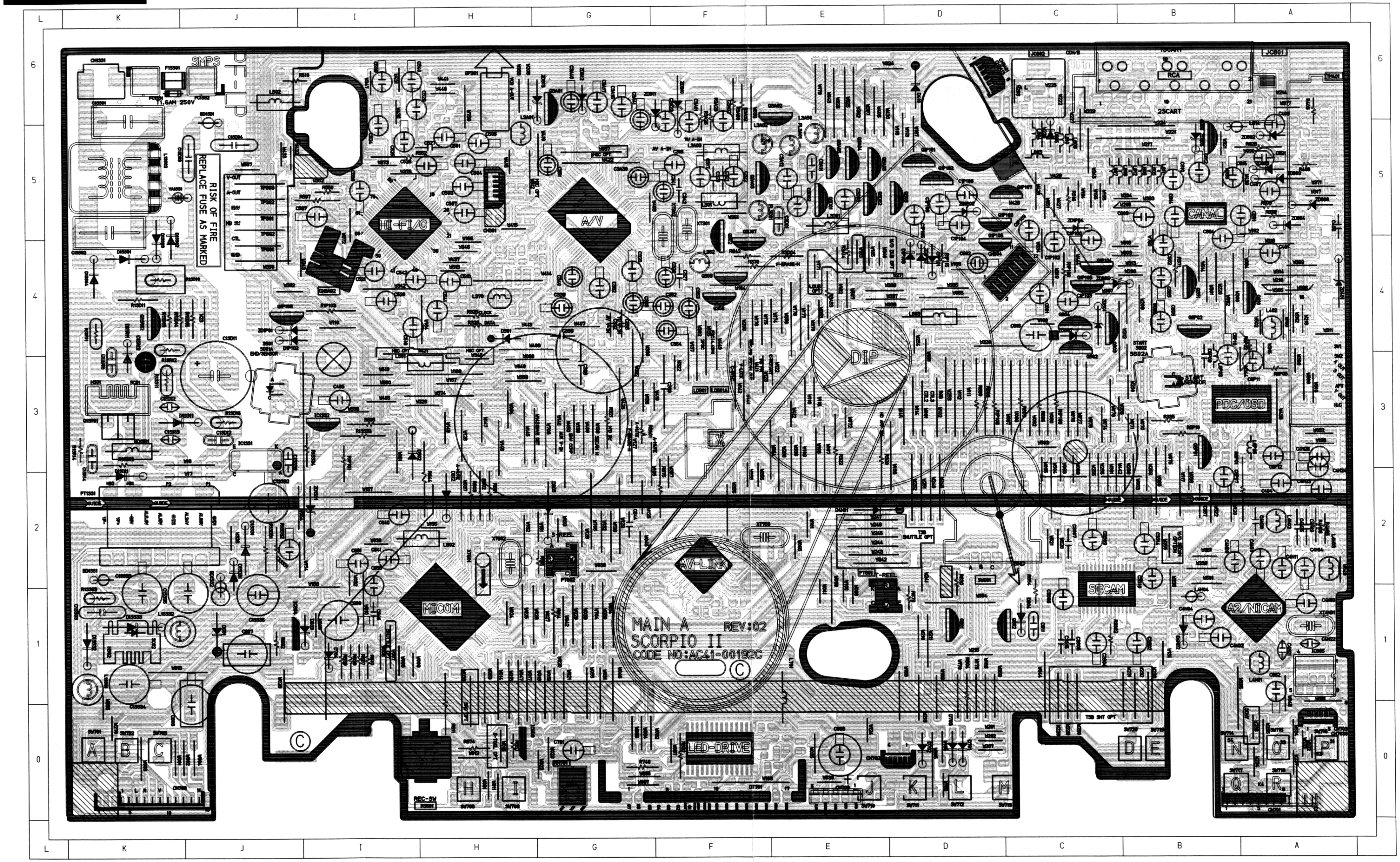
5

7

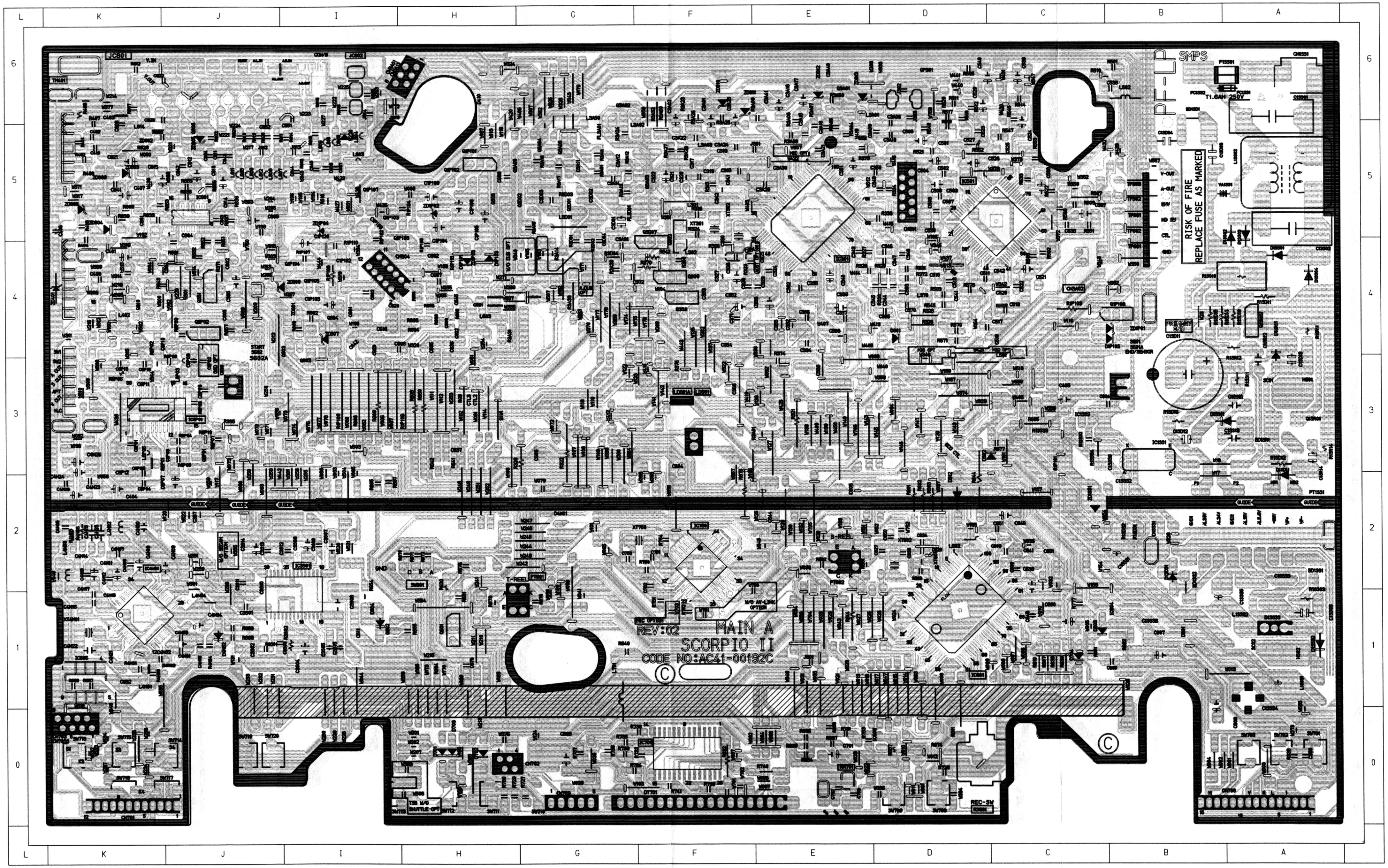
9

3-1 Main PCB (SLV-SE220D/SE220I/SE220G/SE220B/SE420K/SE620D/SE620E/SE620B/SE620N)

COMPONENT SIDE

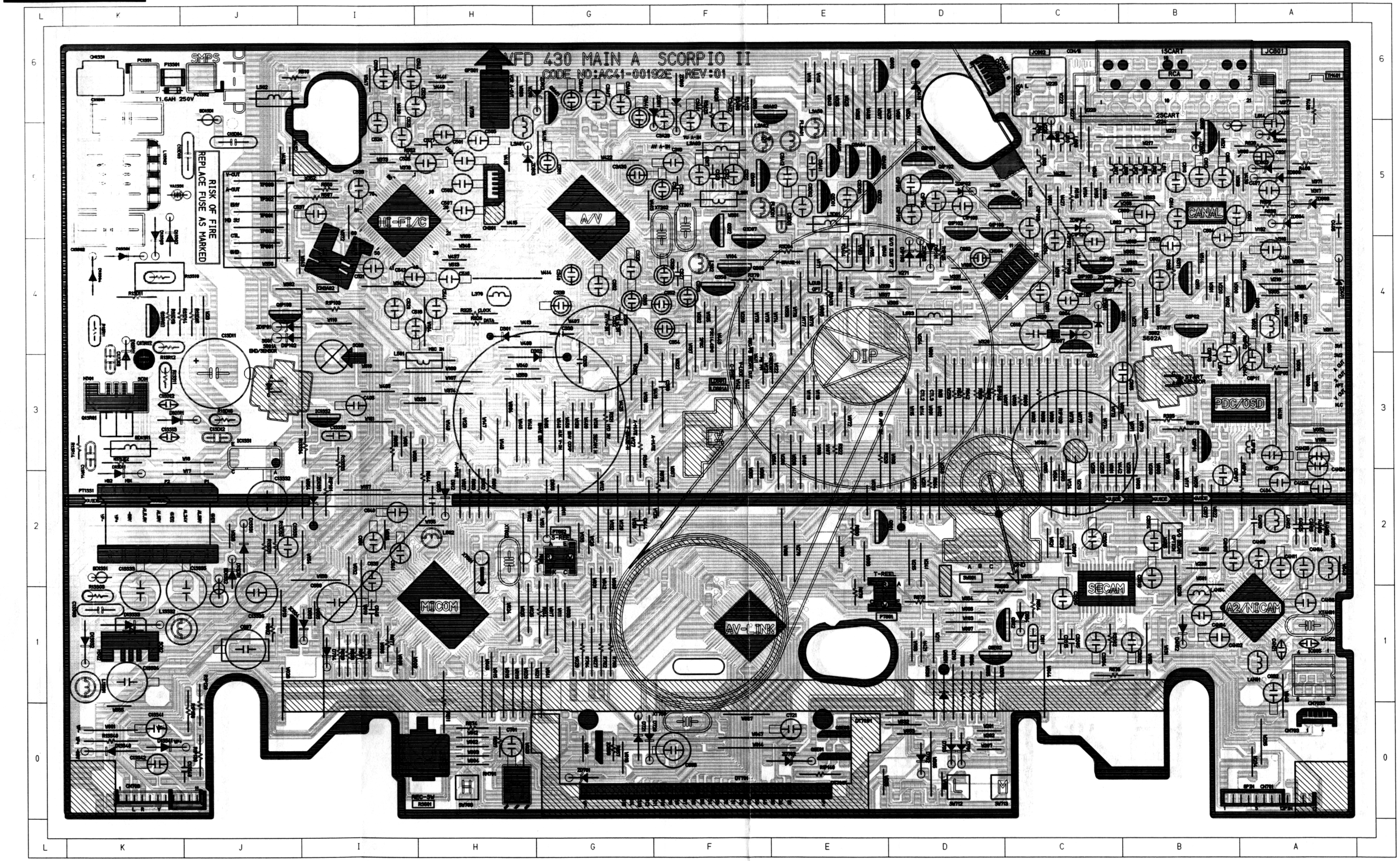

L
K
J
I
H
G
F
E
D
C
B
A
6
5
4
3
2
1
0
SMPS
RISK OF FIRE
REPLACE FUSE AS MARKED
T1.6AH 250V
HI-FI/C
A/V
DIP
CANAL
PDC/OSD
RCA
2SCART
AV-LINK
MICOM
SECAM
A2/NICAM
MAIN A
REV:02
SCORPIO II
CODE NO:AC41-00192C
LED-DRIVE
REC-SW
S-REEL
T-REEL
A
B
C
D
E
H
I
J
K
L
M
N
O
P
Q
R

CONDUCTOR SIDE

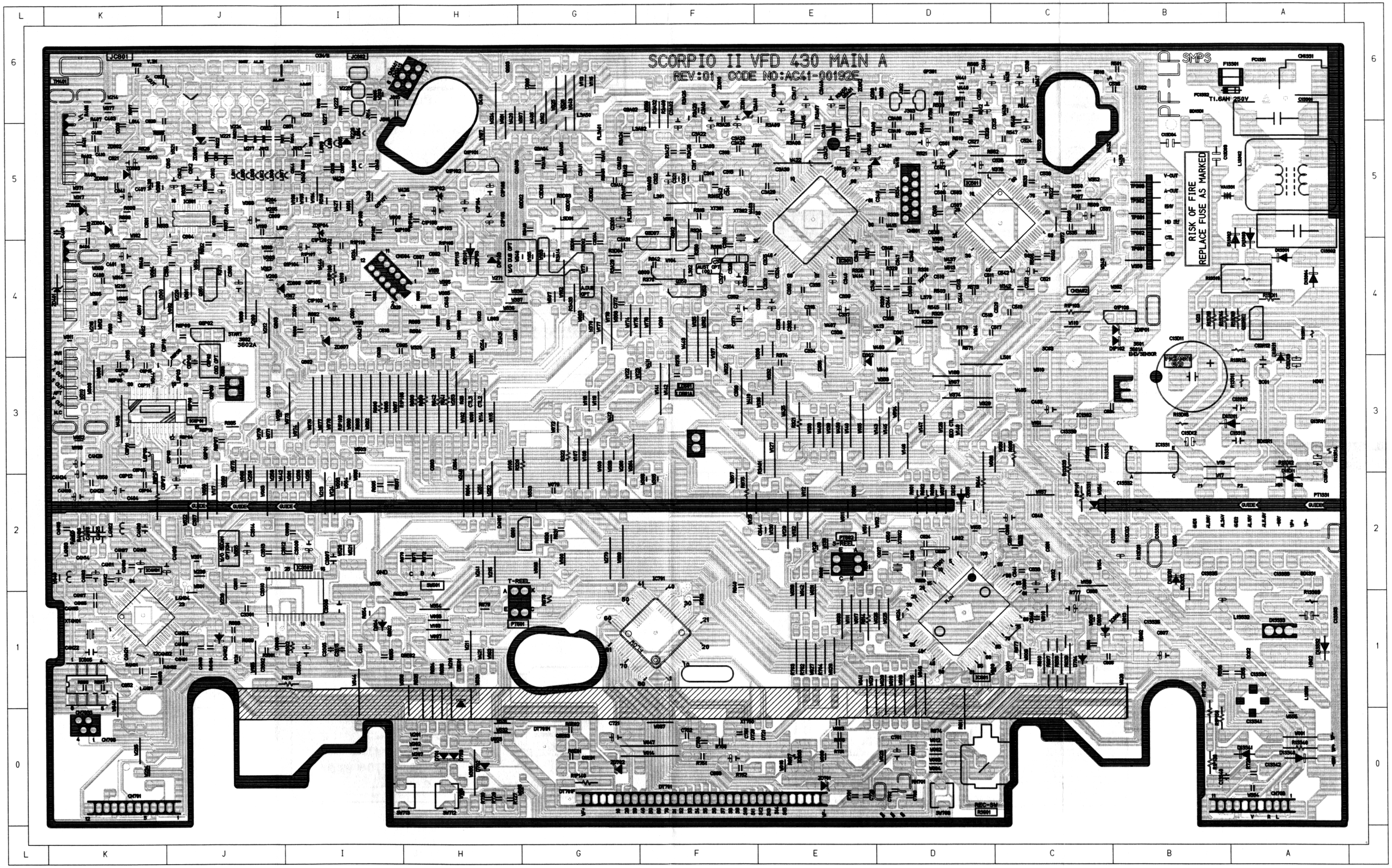

L
K
J
I
H
G
F
E
D
C
B
A
6
5
4
3
2
1
0
SMPS
T1.6AH 250V
RISK OF FIRE
REPLACE FUSE AS MARKED
MAIN A
REV:02
SCORPIO II
CODE NO:AC41-00192C
REC-SW
T-REEL

3-2 Main PCB (SLV-SE720D/SX720D/SE720E/SX720E/SE720G/SE720I/SE720B/SX727D/SE727E/SE720N/SX720N/SE820D/SE820E/SE820G/SE820B/SE820N)

COMPONENT SIDE

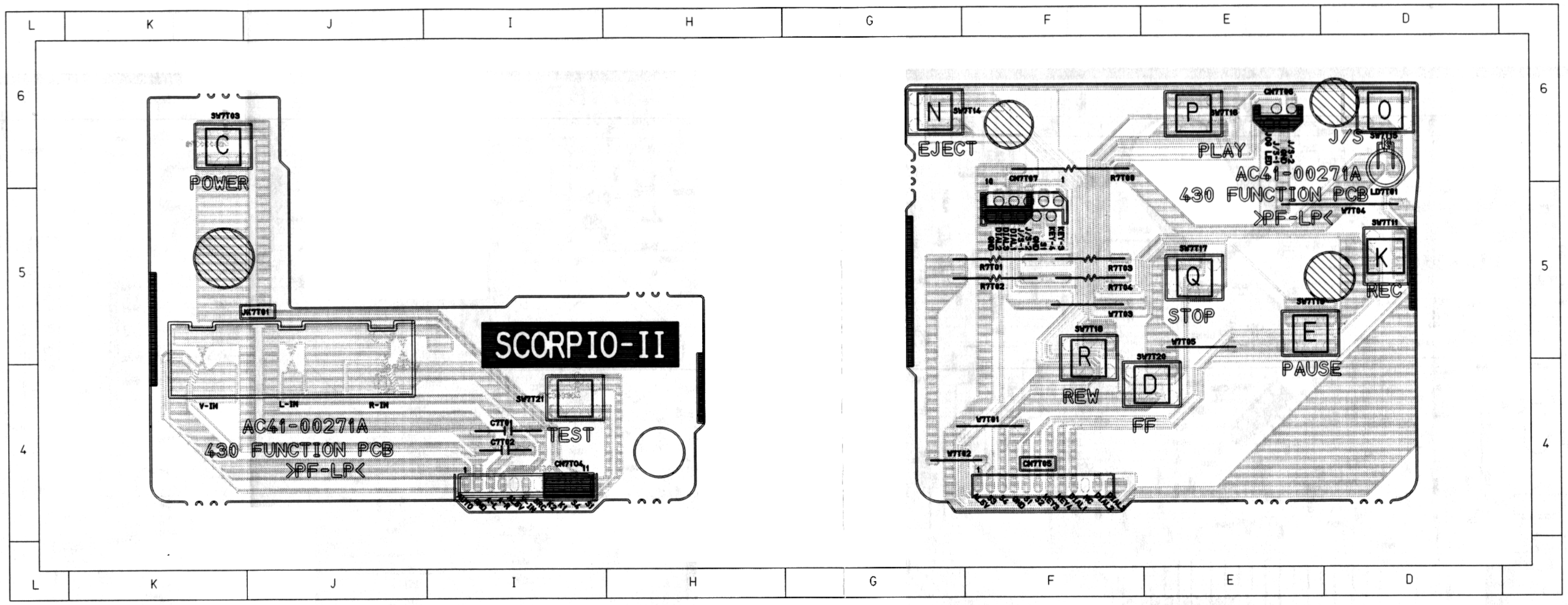

L
K
J
I
H
G
F
E
D
C
B
A
6
5
4
3
2
1
0
VFD 430 MAIN A SCORPIO II
CODE NO:AC41-00192E REV:01
SMPS
T1.6AH 250V
RISK OF FIRE
REPLACE FUSE AS MARKED
HI-FI/C
A/V
DIP
1SCART
RCA
2SCART
CANAL
PDC/OSD
MICOM
AV-LINK
SECAM
A2/NICAM
T-REEL
S-REEL
H
L
M

CONDUCTOR SIDE

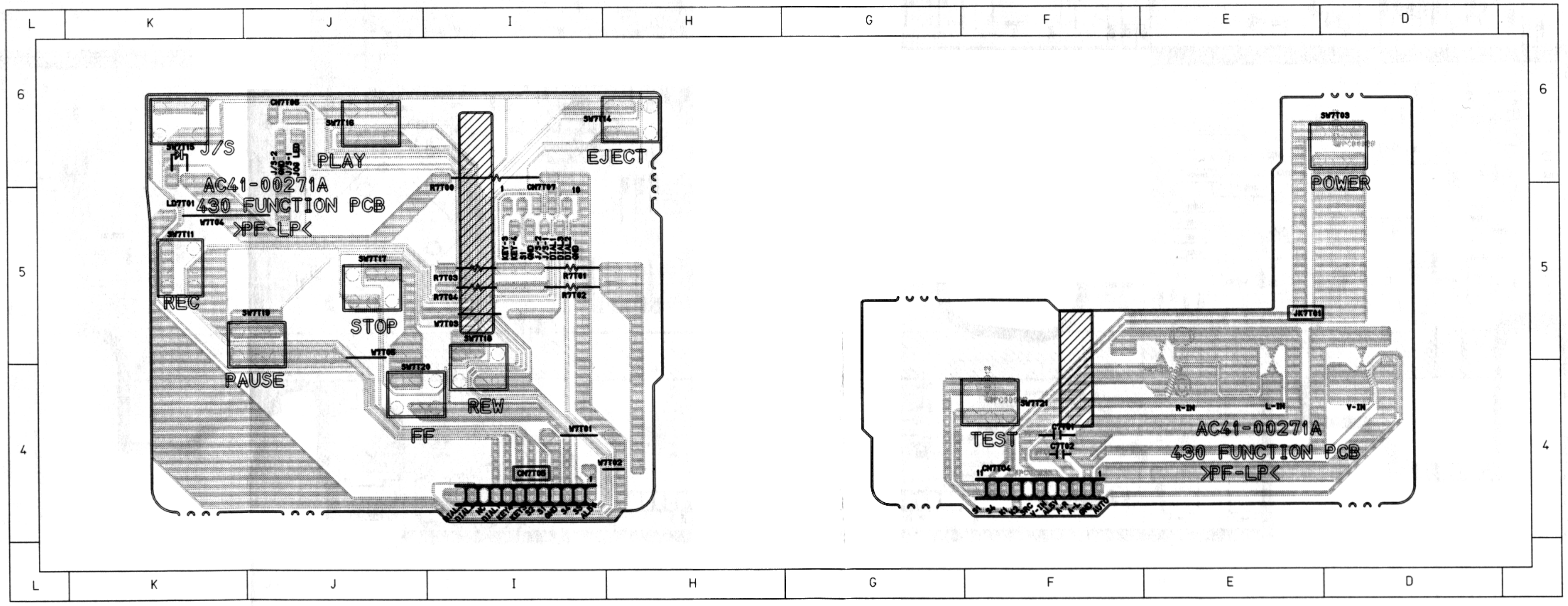

SCORPIO II VFD 430 MAIN A
REV:01 CODE NO:AC41-00192E
SMPS
PF-LP
T1.6AH 250V
RISK OF FIRE
REPLACE FUSE AS MARKED
T-REEL
S-REEL
GUIDE
START
L
K
J
I
H
G
F
E
D
C
B
A
0
1
2
3
4
5
6

3-3 Function PCB (SLV-SE620D/SE620E/SE620B/SE620N/SE720D/SX720D/SE720E/SX720E/SE720G/SE720I/SE720B/SX727D/SE727E/SE720N/SX720N/SE820D/SE820E/SE820G/SE820B/SE820N)

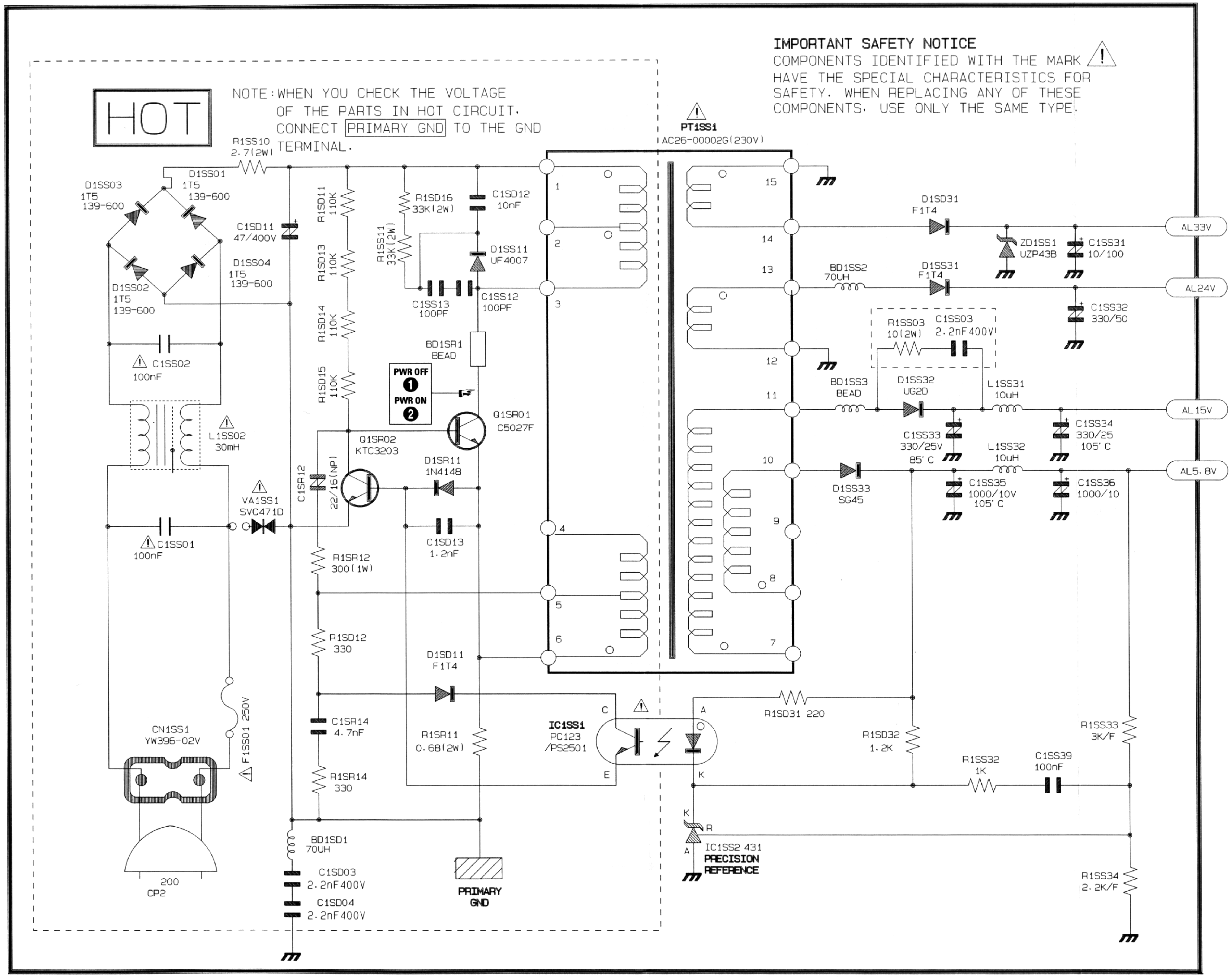
COMPONENT SIDE


L
K
J
I
H
G
F
E
D
6
5
4
C
POWER
SCORPIO-II
TEST
V-IN
L-IN
R-IN
AC41-00271A
430 FUNCTION PCB
>PF-LP<
N
EJECT
P
PLAY
O
J/S
K
REC
Q
STOP
E
PAUSE
R
REW
D
FF

CONDUCTOR SIDE


L
K
J
I
H
G
F
E
D
6
5
4
J/S
PLAY
EJECT
AC41-00271A
430 FUNCTION PCB
>PF-LP<
REC
STOP
PAUSE
REW
FF
POWER
TEST
R-IN
L-IN
V-IN

4-1 S.M.P.S. (A) (SLV-SE220/SE420/SE620)

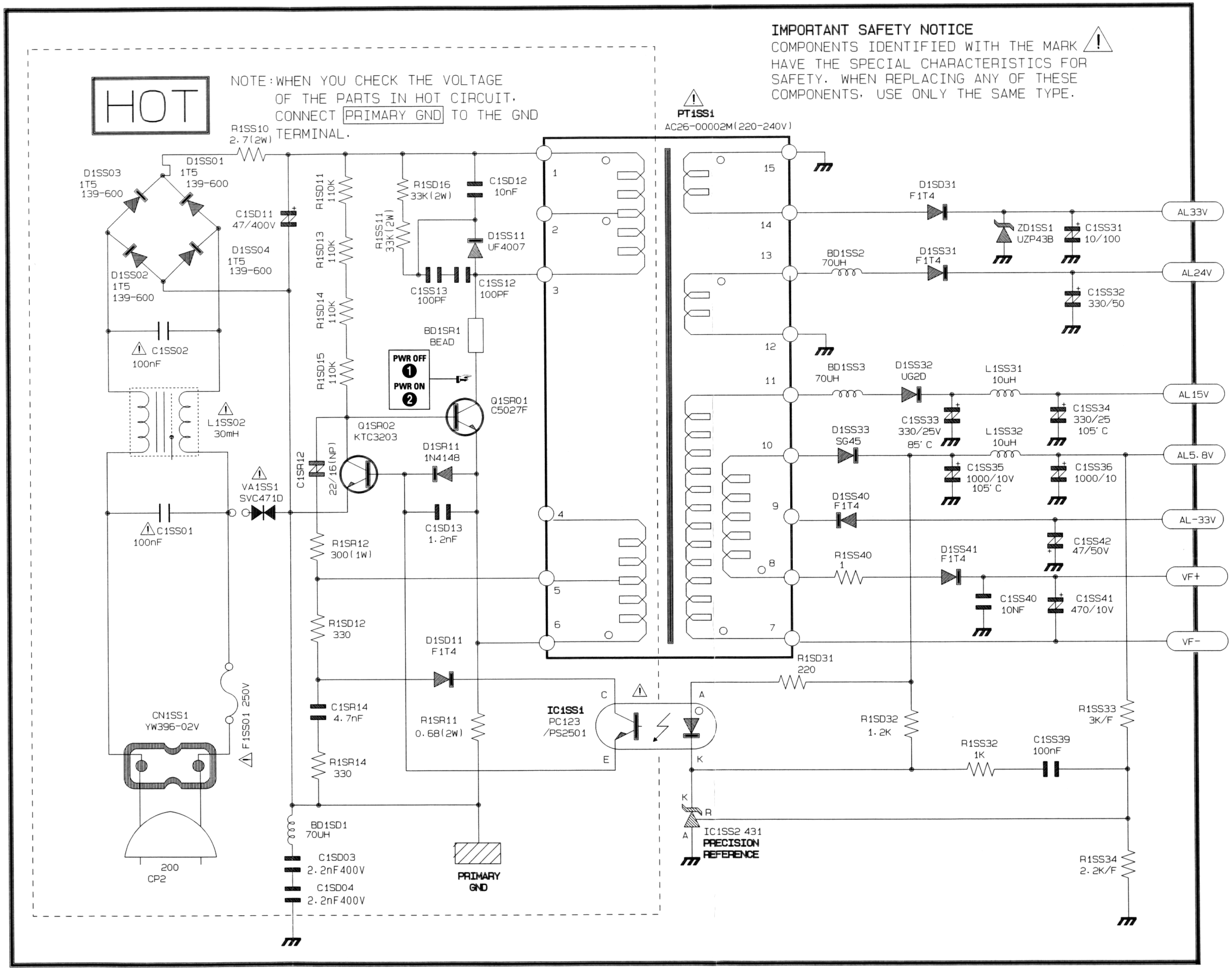


IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: WHEN YOU CHECK THE VOLTAGE OF THE PARTS IN HOT CIRCUIT, CONNECT PRIMARY GND TO THE GND TERMINAL.

HOT
R1SS10 2.7(2W)
D1SS03 1T5 139-600
D1SS01 1T5 139-600
D1SS02 1T5 139-600
D1SS04 1T5 139-600
C1SD11 47/400V
C1SS02 100nF
L1SS02 30mH
C1SS01 100nF
VA1SS1 SVC471D
CN1SS1 YW396-02V
F1SS01 250V
200 CP2
R1SD11 110K
R1SD13 110K
R1SD14 110K
R1SD15 110K
R1SD16 33K(2W)
R1SS11 33K(2W)
C1SD12 10nF
D1SS11 UF4007
C1SS13 100PF
C1SS12 100PF
BD1SR1 BEAD
PWR OFF ❶
PWR ON ❷
Q1SR01 C5027F
Q1SR02 KTC3203
C1SR12 22/16(NP)
D1SR11 1N4148
C1SD13 1.2nF
R1SR12 300(1W)
R1SD12 330
D1SD11 F1T4
C1SR14 4.7nF
R1SR11 0.68(2W)
R1SR14 330
BD1SD1 70UH
C1SD03 2.2nF400V
C1SD04 2.2nF400V
PRIMARY GND
PT1SS1 AC26-00002G(230V)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
IC1SS1 PC123 /PS2501
C
E
A
K
D1SD31 F1T4
ZD1SS1 UZP43B
C1SS31 10/100
AL33V
POWER DRIVE
BD1SS2 70UH
D1SS31 F1T4
AL24V
POWER DRIVE
C1SS32 330/50
R1SS03 10(2W)
C1SS03 2.2nF400V
BD1SS3 BEAD
D1SS32 UG2D
L1SS31 10uH
AL15V
POWER DRIVE
C1SS33 330/25V 85˚C
C1SS34 330/25 105˚C
L1SS32 10uH
D1SS33 SG45
C1SS35 1000/10V 105˚C
C1SS36 1000/10
AL5.8V
POWER DRIVE
R1SD31 220
R1SD32 1.2K
R1SS32 1K
C1SS39 100nF
R1SS33 3K/F
K
R
A
IC1SS2 431 PRECISION REFERENCE
R1SS34 2.2K/F

4-2 S.M.P.S. (B) (SLV-SE720/SE727/SE820/SX720/SX727)



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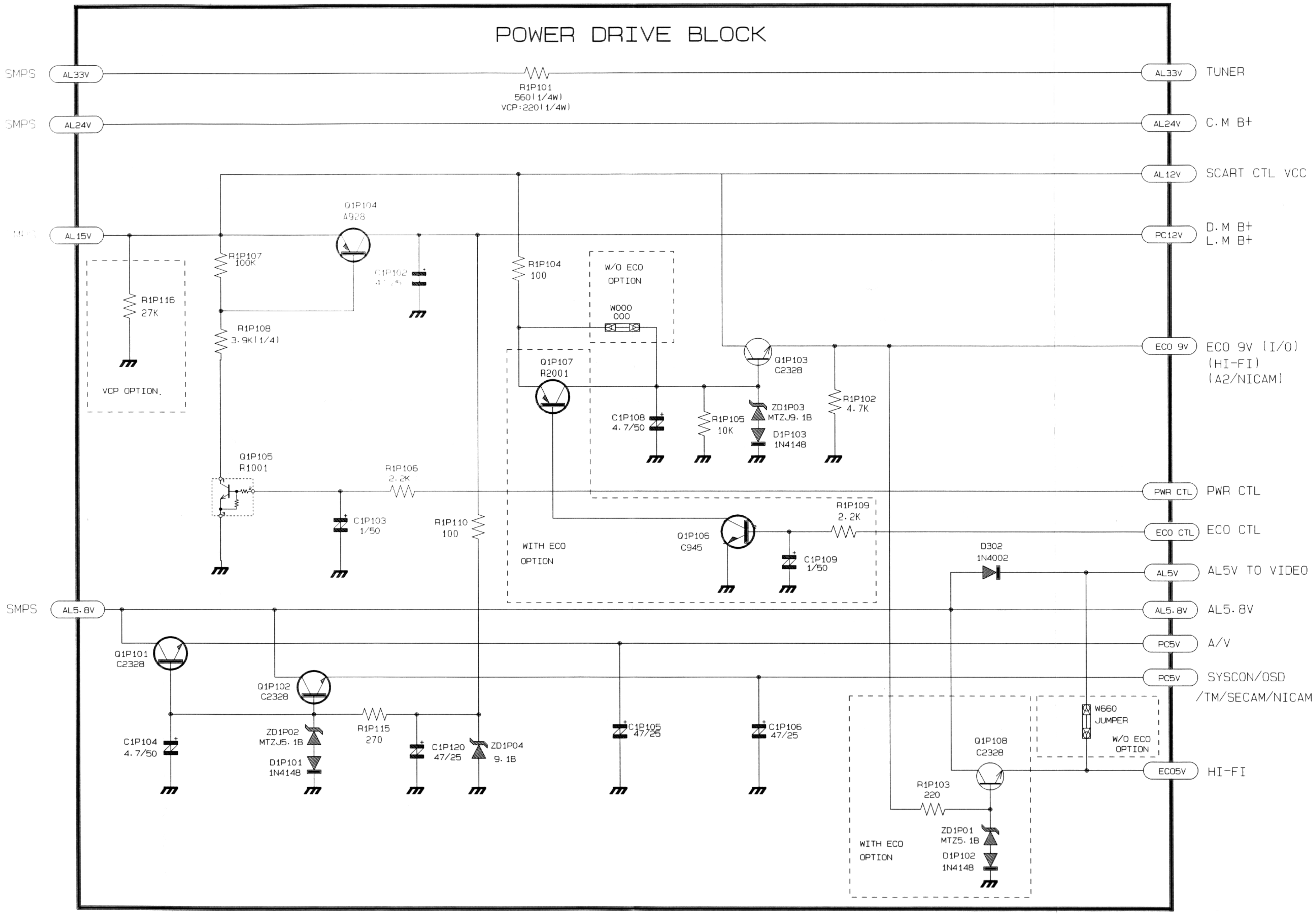
SAFETY. WHEN REPLACING ANY OF THESE
COMPONENTS, USE ONLY THE SAME TYPE.

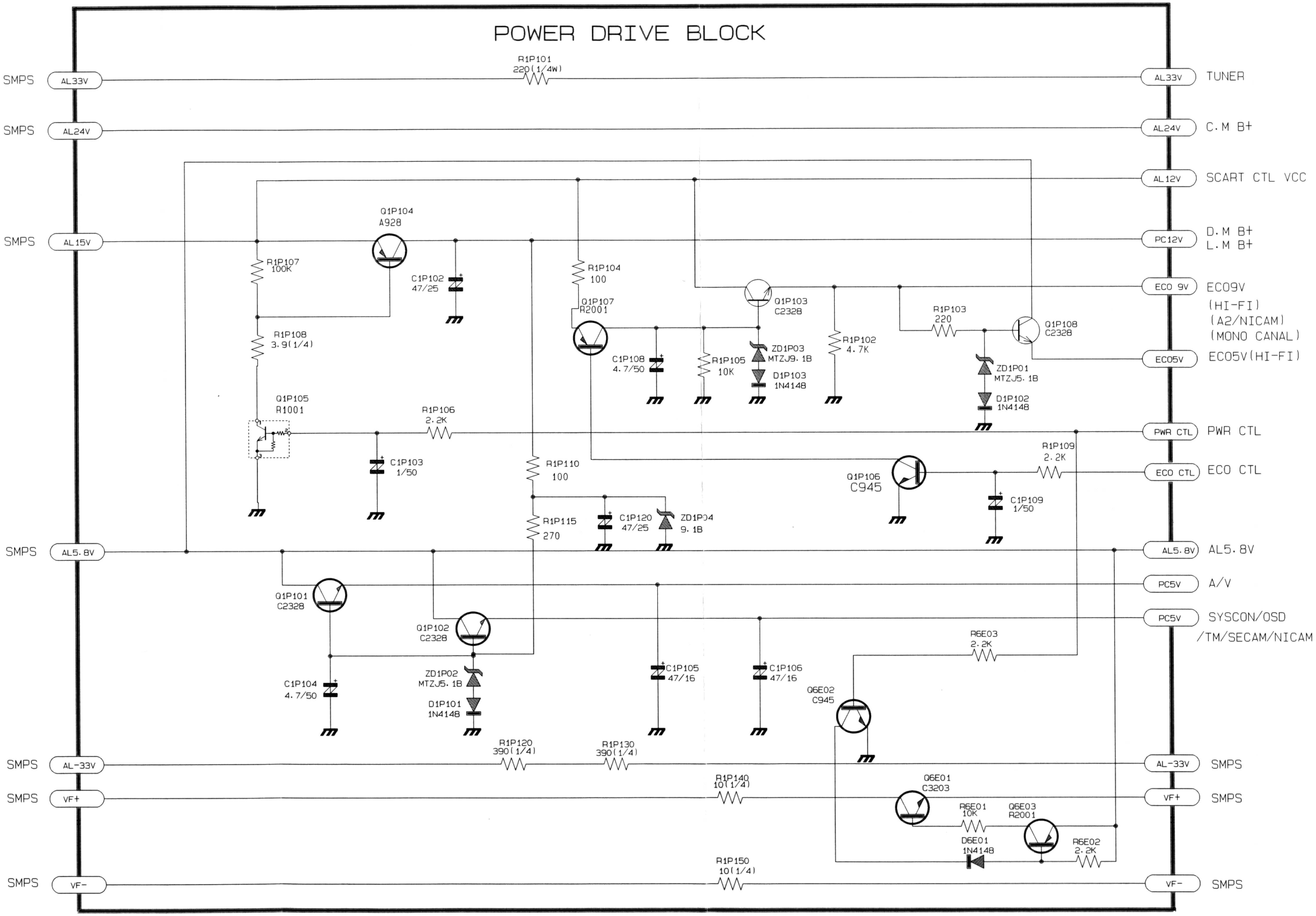
NOTE: WHEN YOU CHECK THE VOLTAGE OF THE PARTS IN HOT CIRCUIT, CONNECT PRIMARY GND TO THE GND TERMINAL.

HOT
R1SS10 2.7(2W)
D1SS01 1T5 139-600
D1SS03 1T5 139-600
D1SS02 1T5 139-600
D1SS04 1T5 139-600
C1SD11 47/400V
C1SS02 100nF
L1SS02 30mH
C1SS01 100nF
VA1SS1 SVC471D
CN1SS1 YW396-02V
F1SS01 250V
200 CP2
R1SD11 110K
R1SD13 110K
R1SD14 110K
R1SD15 110K
R1SD16 33K(2W)
R1SS11 33K(2W)
C1SD12 10nF
D1SS11 UF4007
C1SS13 100PF
C1SS12 100PF
BD1SR1 BEAD
PWR OFF ❶
PWR ON ❷
Q1SR01 C5027F
Q1SR02 KTC3203
D1SR11 1N4148
C1SR12 22/16(NP)
C1SD13 1.2nF
R1SR12 300(1W)
R1SD12 330
D1SD11 F1T4
C1SR14 4.7nF
R1SR11 0.68(2W)
R1SR14 330
BD1SD1 70UH
C1SD03 2.2nF400V
C1SD04 2.2nF400V
PRIMARY GND
IC1SS1 PC123 /PS2501
C
E
A
K
PT1SS1 AC26-00002M(220-240V)
1
2
3
4
5
6
15
14
13
12
11
10
9
8
7
D1SD31 F1T4
ZD1SS1 UZP43B
C1SS31 10/100
AL33V
POWER DRIVE
BD1SS2 70UH
D1SS31 F1T4
AL24V
POWER DRIVE
C1SS32 330/50
BD1SS3 70UH
D1SS32 UG2D
L1SS31 10uH
AL15V
POWER DRIVE
C1SS33 330/25V 85°C
C1SS34 330/25 105°C
D1SS33 SG45
L1SS32 10uH
AL5.8V
POWER DRIVE
C1SS35 1000/10V 105°C
C1SS36 1000/10
D1SS40 F1T4
AL-33V
POWER DRIVE
C1SS42 47/50V
R1SS40 1
D1SS41 F1T4
VF+
POWER DRIVE
C1SS40 10NF
C1SS41 470/10V
VF-
POWER DRIVE
R1SD31 220
R1SD32 1.2K
R1SS33 3K/F
R1SS32 1K
C1SS39 100nF
IC1SS2 431 PRECISION REFERENCE
K
R
A
R1SS34 2.2K/F

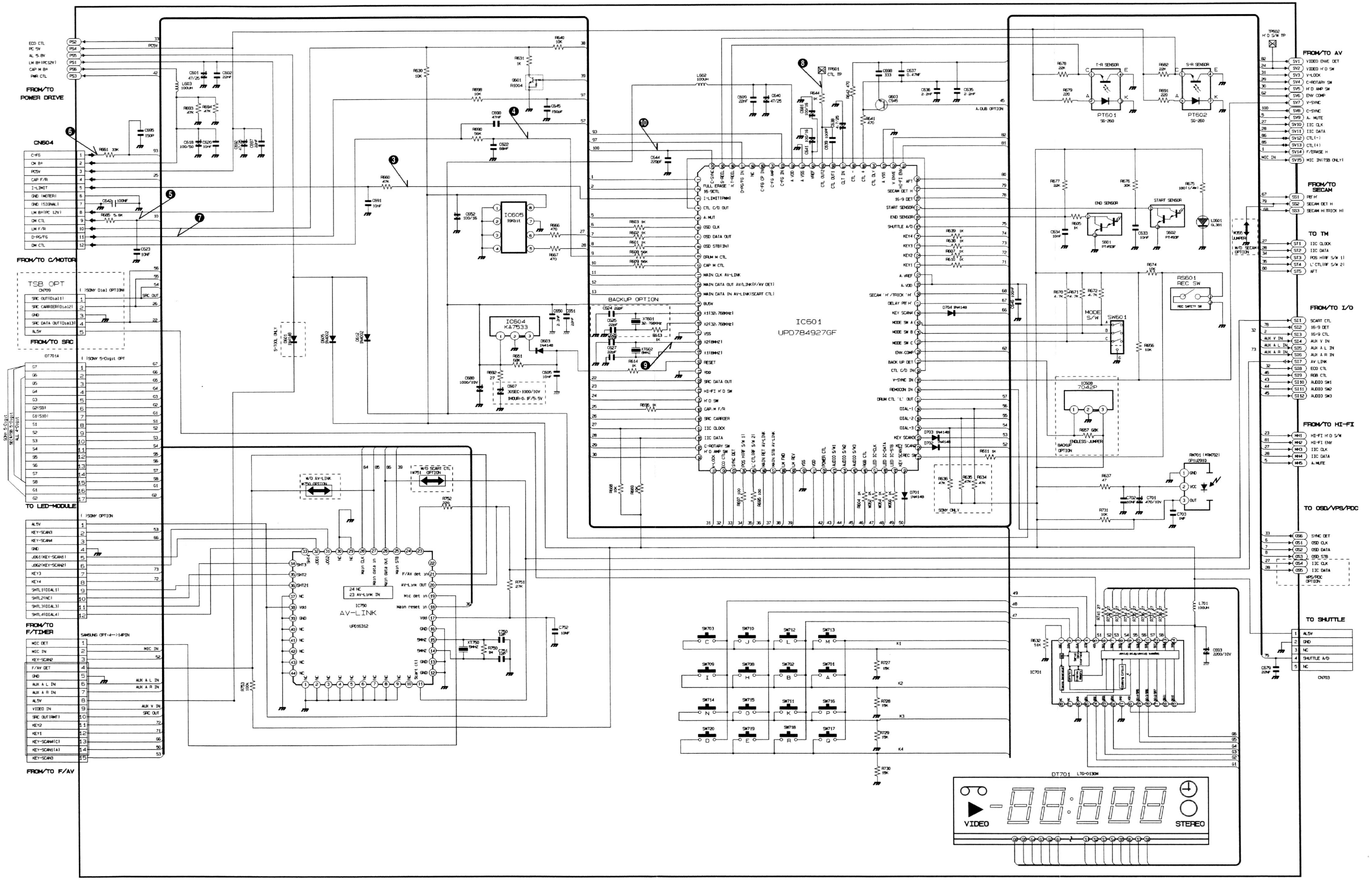
4-3 Power (A) (SLV-SE220/SE420/SE620)


POWER DRIVE BLOCK
SMPS
AL33V
R1P101
560(1/4W)
VCP:220(1/4W)
AL33V
TUNER
SMPS
AL24V
AL24V
C.M B+
AL12V
SCART CTL VCC
Q1P104
A928
AL15V
PC12V
D.M B+
L.M B+
R1P107
100K
C1P102
47/25
R1P104
100
W/O ECO
OPTION
W000
000
R1P116
27K
R1P108
3.9K(1/4)
VCP OPTION.
Q1P107
R2001
Q1P103
C2328
ECO 9V
ECO 9V (I/O)
(HI-FI)
(A2/NICAM)
R1P102
4.7K
C1P108
4.7/50
R1P105
10K
ZD1P03
MTZJ9.1B
D1P103
1N4148
Q1P105
R1001
R1P106
2.2K
PWR CTL
PWR CTL
R1P109
2.2K
C1P103
1/50
R1P110
100
WITH ECO
OPTION
Q1P106
C945
ECO CTL
ECO CTL
C1P109
1/50
D302
1N4002
AL5V
AL5V TO VIDEO
SMPS
AL5.8V
AL5.8V
AL5.8V
Q1P101
C2328
PC5V
A/V
Q1P102
C2328
PC5V
SYSCON/OSD
/TM/SECAM/NICAM
R1P115
270
ZD1P02
MTZJ5.1B
D1P101
1N4148
C1P104
4.7/50
C1P120
47/25
ZD1P04
9.1B
C1P105
47/25
C1P106
47/25
W660
JUMPER
W/O ECO
OPTION
Q1P108
C2328
ECO5V
HI-FI
R1P103
220
ZD1P01
MTZ5.1B
D1P102
1N4148
WITH ECO
OPTION

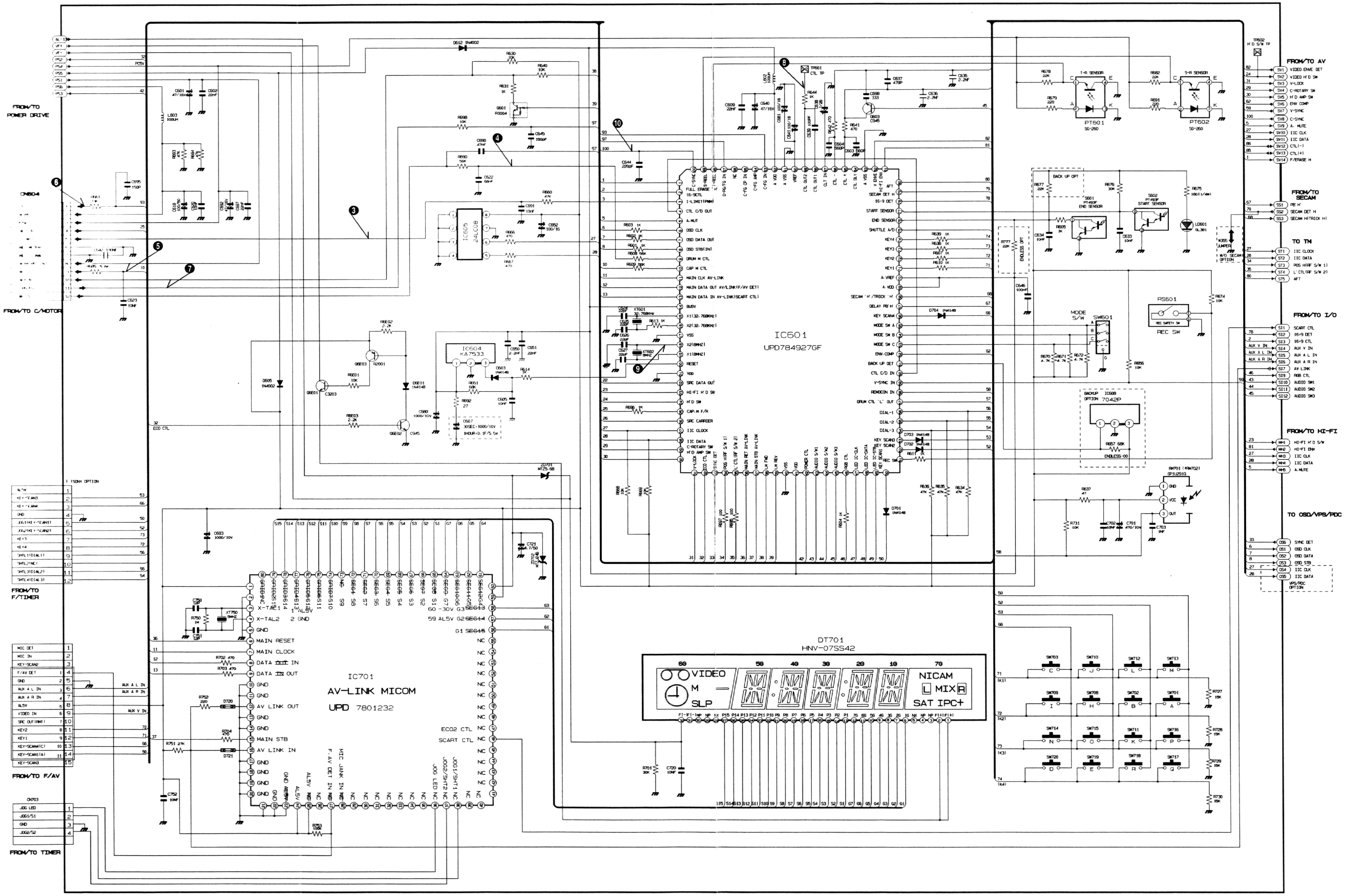
4-4 Power (B) (SLV-SE720/SE727/SE820/SX720/SX727)


POWER DRIVE BLOCK
SMPS
AL33V
R1P101
220(1/4W)
AL33V
TUNER
SMPS
AL24V
AL24V
C.M B+
AL12V
SCART CTL VCC
Q1P104
A928
SMPS
AL15V
PC12V
D.M B+
L.M B+
R1P107
100K
C1P102
47/25
R1P104
100
Q1P107
R2001
Q1P103
C2328
ECO 9V
ECO9V
(HI-FI)
(A2/NICAM)
(MONO CANAL)
R1P103
220
Q1P108
C2328
R1P108
3.9(1/4)
C1P108
4.7/50
R1P105
10K
ZD1P03
MTZJ9.1B
D1P103
1N4148
R1P102
4.7K
ZD1P01
MTZJ5.1B
ECO5V
ECO5V(HI-FI)
D1P102
1N4148
Q1P105
R1001
R1P106
2.2K
PWR CTL
PWR CTL
R1P109
2.2K
C1P103
1/50
R1P110
100
Q1P106
C945
ECO CTL
ECO CTL
C1P109
1/50
R1P115
270
C1P120
47/25
ZD1P04
9.1B
SMPS
AL5.8V
AL5.8V
AL5.8V
Q1P101
C2328
PC5V
A/V
Q1P102
C2328
PC5V
SYSCON/OSD
/TM/SECAM/NICAM
R6E03
2.2K
ZD1P02
MTZJ5.1B
C1P105
47/16
C1P106
47/16
C1P104
4.7/50
D1P101
1N4148
Q6E02
C945
R1P120
390(1/4)
R1P130
390(1/4)
SMPS
AL-33V
AL-33V
SMPS
R1P140
10(1/4)
Q6E01
C3203
SMPS
VF+
VF+
SMPS
R6E01
10K
Q6E03
R2001
D6E01
1N4148
R6E02
2.2K
R1P150
10(1/4)
SMPS
VF-
VF-
SMPS

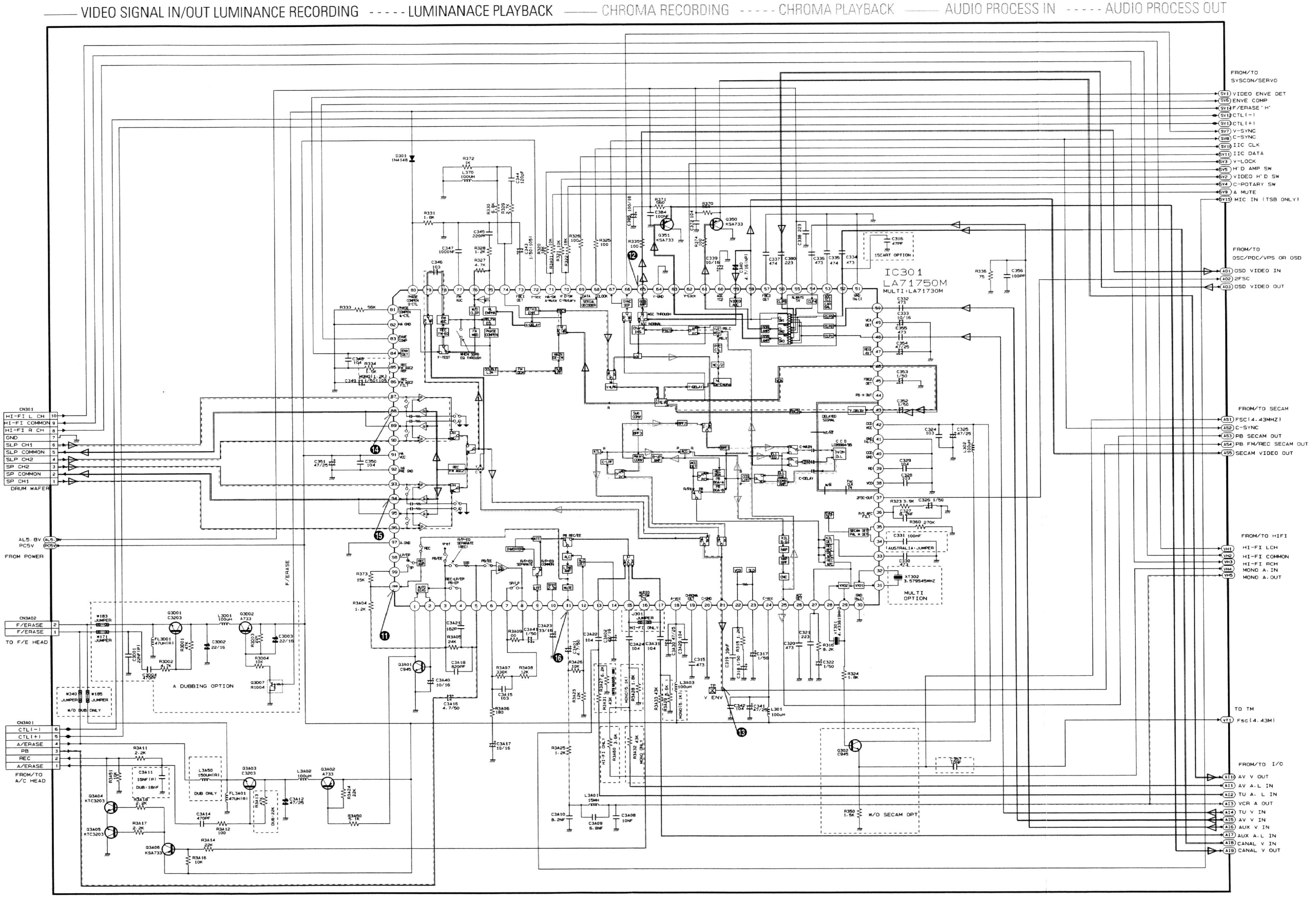
4-5 System Control/Servo (A) (SLV-SE220/SE420/SE620)


FROM/TO POWER DRIVE
CN604
FROM/TO C/MOTOR
TSB OPT
FROM/TO SRC
DT701A
TO LED-MODULE
FROM/TO F/TIMER
FROM/TO F/AV
IC605
93Kbit
IC604
KA7533
BACKUP OPTION
IC601
UPD784927GF
IC750
AV-LINK
UPD16312
W/O AV-LINK
PT601
PT602
T-R SENSOR
S-R SENSOR
END SENSOR
START SENSOR
RS601
REC SW
SW601
MODE S/W
IC608
7042P
FROM/TO AV
FROM/TO SECAM
TO TM
FROM/TO I/O
FROM/TO HI-FI
TO OSD/VPS/PDC
TO SHUTTLE
CN703
IC701
DT701 LTG-0130M
VIDEO
STEREO

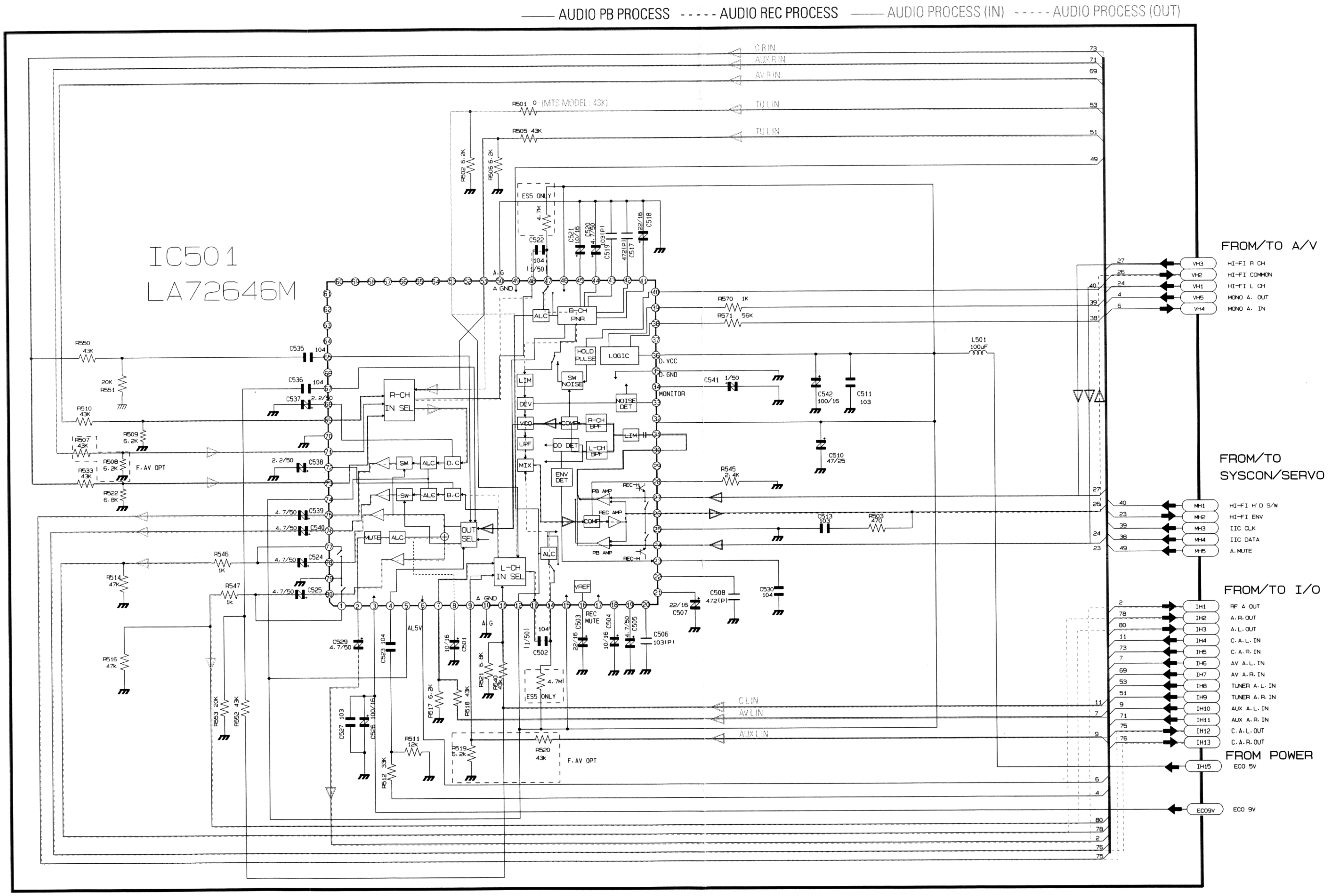
System Control/Servo (B) (SLV-SE720/SE727/SE820/SX720/SX727)


FROM/TO POWER DRIVE
CN604
FROM/TO C/MOTOR
FROM/TO F/TIMER
FROM/TO F/AV
FROM/TO TIMER
FROM/TO AV
FROM/TO SECAM
TO TM
FROM/TO I/O
FROM/TO HI-FI
TO OSD/VPS/PDC
IC501
UPD784927GF
IC505
24C08
IC504
KA7533
IC701
AV-LINK MICOM
UPD 7801232
DT701
HNV-07SS42
VIDEO
M
SLP
NICAM
MIX
SAT IPC+
PT601
PT602
T-R SENSOR
S-R SENSOR
RS601
REC SW
MODE S/W
SW601
BACKUP OPTION
IC508
7042P
X-TAL1
X-TAL2
GND
MAIN RESET
MAIN CLOCK
DATA IN
DATA OUT
AV LINK OUT
MAIN STB
AV LINK IN
ECO2 CTL
SCART CTL
JOG LED
JOG1/SHT1
JOG2/SHT2
MIC JAACK IN
F/AV DET IN
AL5V
4-15
4-16

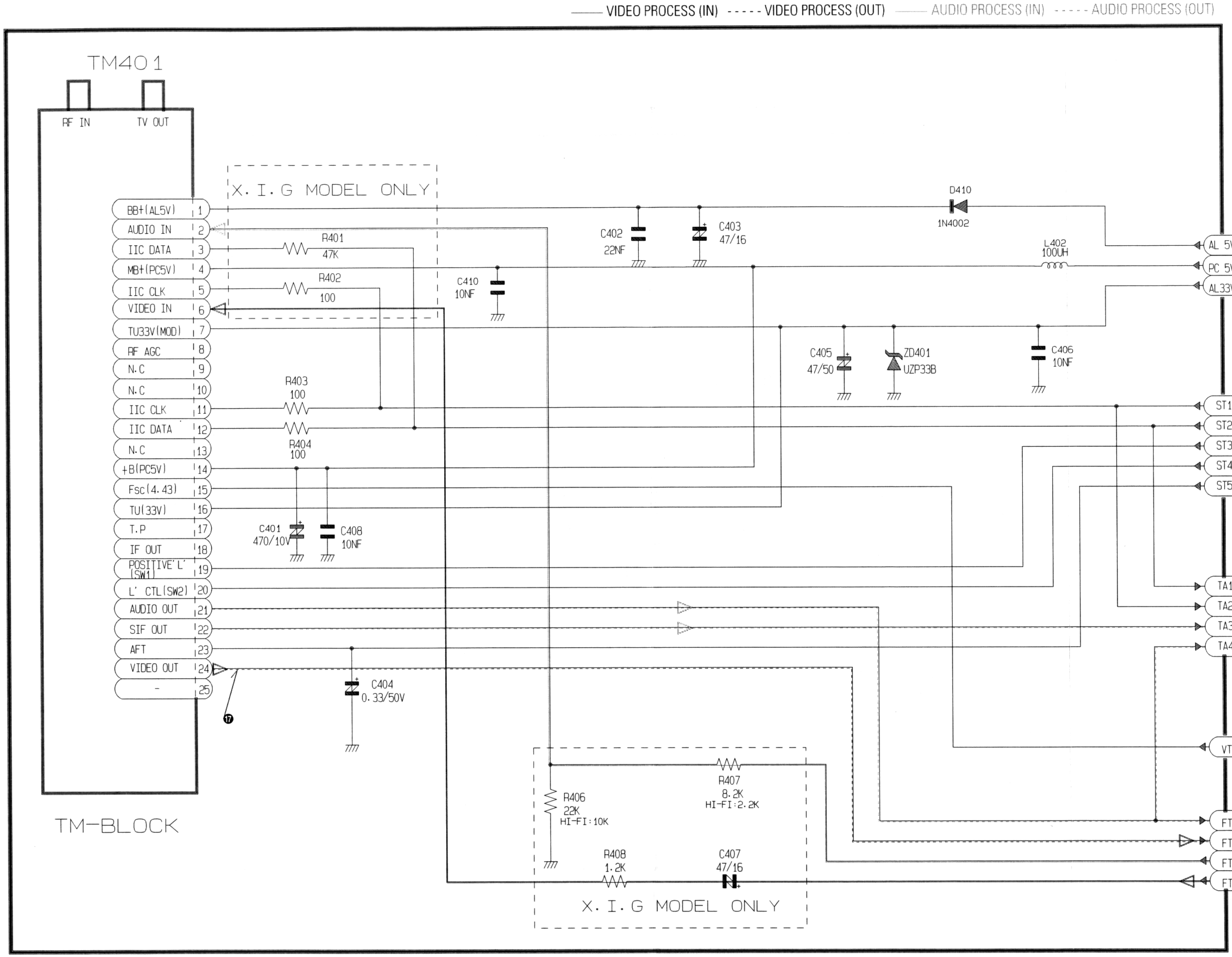
4-7 Audio/Video


VIDEO SIGNAL IN/OUT LUMINANCE RECORDING
LUMINANACE PLAYBACK
CHROMA RECORDING
CHROMA PLAYBACK
AUDIO PROCESS IN
AUDIO PROCESS OUT
IC301
LA71750M
MULTI:LA71730M
CN301
HI-FI L CH 10
HI-FI COMMON 9
HI-FI R CH 8
GND 7
SLP CH1 6
SLP COMMON 5
SLP CH2 4
SP CH2 3
SP COMMON 2
SP CH1 1
DRUM WAFER
AL5.8V
PC5V
FROM POWER
CN3A02
F/ERASE 2
F/ERASE 1
TO F/E HEAD
W183 JUMPER
W171 JUMPER
W340 JUMPER
W185 JUMPER
W/O DUB ONLY
A DUBBING OPTION
CN3A01
CTL(-) 6
CTL(+) 5
A/ERASE 4
PB 3
REC 2
A/ERASE 1
FROM/TO A/C HEAD
Q3A04 KTC3203
Q3A05 KTC3203
Q3A06 KSA733
Q3D01 C3203
Q3D02 A733
Q3A03 C3203
Q3A02 A733
Q3A01 C945
Q350 KSA733
Q351 KSA733
Q302 C945
D301 1N4148
DUB ONLY
F/ERASE
V ENV
MULTI OPTION
AUSTRALIA:JUMPER
XT302 3.579545MHZ
W/O SECAM OPT
15SCART OPTION
FROM/TO SYSCON/SERVO
SV1 VIDEO ENVE DET
SV6 ENVE COMP
SV14 F/ERASE 'H'
SV12 CTL(-)
SV13 CTL(+)
SV7 V-SYNC
SV8 C-SYNC
SV10 IIC CLK
SV11 IIC DATA
SV3 V-LOCK
SV5 H'D AMP SW
SV2 VIDEO H'D SW
SV4 C-POTARY SW
SV9 A MUTE
SV15 MIC IN (TSB ONLY)
FROM/TO OSC/PDC/VPS OR OSD
A01 OSD VIDEO IN
A02 2FSC
A03 OSD VIDEO OUT
FROM/TO SECAM
AS1 FSC(4.43MHZ)
AS2 C-SYNC
AS3 PB SECAM OUT
AS4 PB FM/REC SECAM OUT
AS5 SECAM VIDEO OUT
FROM/TO HIFI
VH1 HI-FI LCH
VH2 HI-FI COMMON
VH3 HI-FI RCH
VH4 MONO A.IN
VH5 MONO A.OUT
TO TM
VT1 Fsc(4.43M)
FROM/TO I/O
AI10 AV V OUT
AI1 AV A.L IN
AI2 TU A. L IN
AI3 VCR A OUT
AI4 TU V IN
AI5 AV V IN
AI6 AUX V IN
AI7 AUX A.L IN
AI8 CANAL V IN
AI9 CANAL V OUT
⑪
⑫
⑬
⑭
⑮
⑯

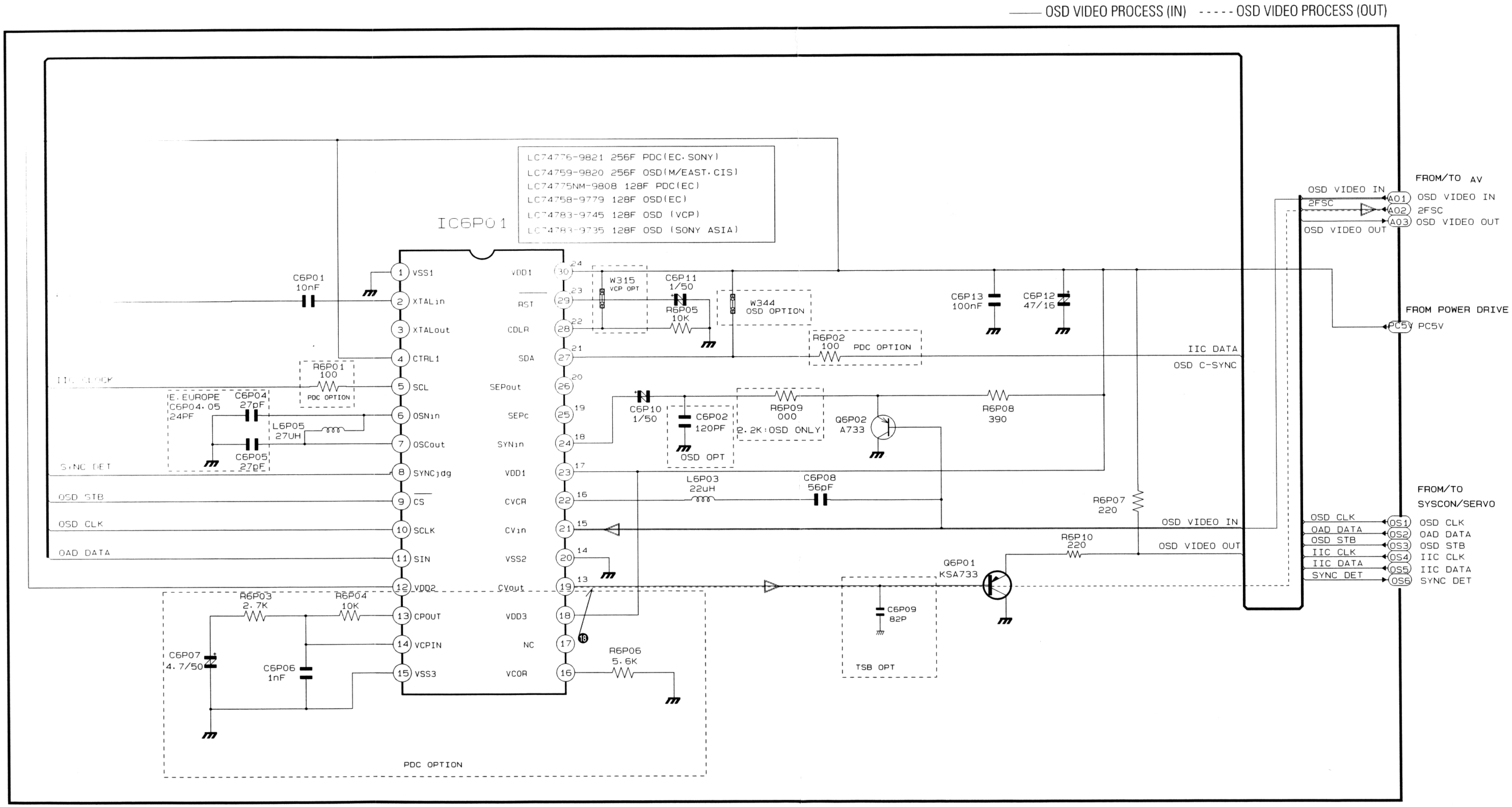
4-8 Hi-Fi (Option) (SLV-SE620/SE720/SE727/SE820/SX720/SX727)


AUDIO PB PROCESS
AUDIO REC PROCESS
AUDIO PROCESS (IN)
AUDIO PROCESS (OUT)
IC501
LA72646M
C.R.IN
AUX.R.IN
AV.R.IN
TU.L.IN
R501 0 (MTS MODEL : 43K)
R505 43K
R502 6.2K
R506 6.2K
ES5 ONLY
4.7M
C522 104
1/50
C521 10/16
C520 4.7/50
C519 103(P)
472(P)
C517
22/16
C518
A.G
A GND
ALC
R-CH PNR
HOLD PULSE
LOGIC
SW NOISE
LIM
DEV
NOISE DET
VCO
COMP
R-CH BPF
LPF
DO DET
L-CH BPF
MIX
ENV DET
R-CH IN SEL
L-CH IN SEL
OUT SEL
MUTE
SW
D.C
PB AMP
REC AMP
REC-H
VREF
D.VCC
D.GND
MONITOR
R570 1K
R571 56K
L501 100uF
C541 1/50
C542 100/16
C511 103
C510 47/25
R545 2.4K
C513 103
R503 470
R550 43K
C535 104
C536 104
C537 2.2/50
R551 20K
R510 43K
R509 6.2K
R507 43K
R508 6.2K
R533 43K
F.AV OPT
R522 6.8K
C538 2.2/50
C539 4.7/50
C540 4.7/50
C524 4.7/50
C525 4.7/50
R546 1K
R547 1K
R514 47K
R516 47K
C508 472(P)
C507 22/16
C530 104
AL5V
C529 4.7/50
C523 104
C501 10/16
R521 6.8K
R540 43K
C502 104 (1/50)
4.7M
ES5 ONLY
C503 22/16
REC MUTE
C504 10/16
C505 4.7/50
C506 103(P)
C.L.IN
AV.L.IN
AUX.L.IN
R517 6.2K
R518 43K
C527 103
C526 100/16
R511 12K
R512 33K
R519 6.2K
R520 43K
F.AV OPT
R553 20K
R552 43K
FROM/TO A/V
VH3 HI-FI R CH
VH2 HI-FI COMMON
VH1 HI-FI L CH
VH5 MONO A. OUT
VH4 MONO A. IN
FROM/TO SYSCON/SERVO
MH1 HI-FI H'D S/W
MH2 HI-FI ENV
MH3 IIC CLK
MH4 IIC DATA
MH5 A.MUTE
FROM/TO I/O
IH1 RF A OUT
IH2 A.R.OUT
IH3 A.L.OUT
IH4 C.A.L.IN
IH5 C.A.R.IN
IH6 AV A.L.IN
IH7 AV A.R.IN
IH8 TUNER A.L.IN
IH9 TUNER A.R.IN
IH10 AUX A.L.IN
IH11 AUX A.R.IN
IH12 C.A.L.OUT
IH13 C.A.R.OUT
FROM POWER
IH15 ECO 5V
ECO9V ECO 9V

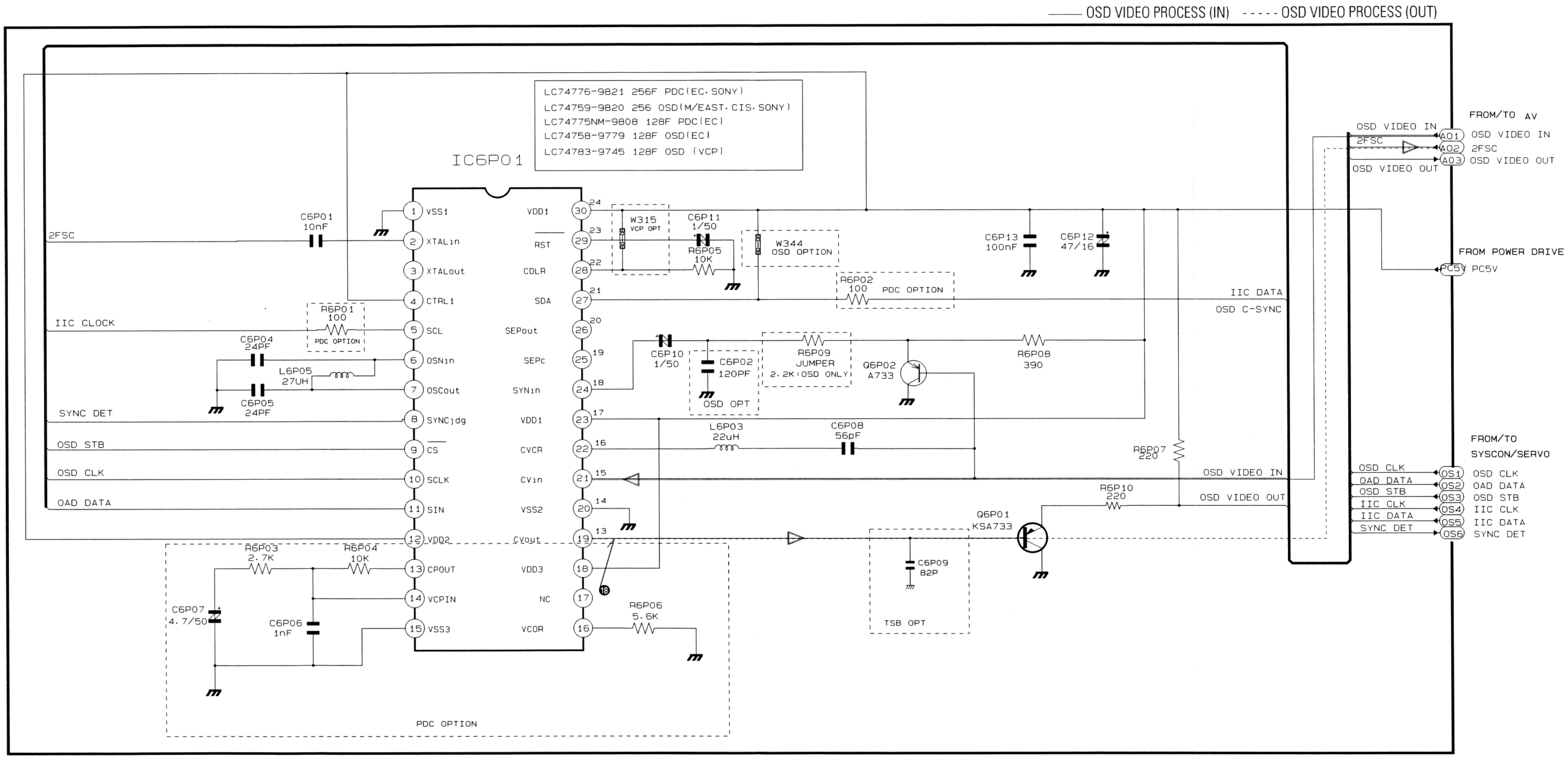
4-9 TM-Block


VIDEO PROCESS (IN)
VIDEO PROCESS (OUT)
AUDIO PROCESS (IN)
AUDIO PROCESS (OUT)
TM401
RF IN
TV OUT
X. I. G MODEL ONLY
BB+(AL5V) 1
AUDIO IN 2
IIC DATA 3
MB+(PC5V) 4
IIC CLK 5
VIDEO IN 6
TU33V(MOD) 7
RF AGC 8
N.C 9
N.C 10
IIC CLK 11
IIC DATA 12
N.C 13
+B(PC5V) 14
Fsc(4.43) 15
TU(33V) 16
T.P 17
IF OUT 18
POSITIVE'L' (SW1) 19
L' CTL(SW2) 20
AUDIO OUT 21
SIF OUT 22
AFT 23
VIDEO OUT 24
- 25
R401 47K
R402 100
R403 100
R404 100
C410 10NF
C402 22NF
C403 47/16
D410 1N4002
L402 100UH
C405 47/50
ZD401 UZP33B
C406 10NF
C401 470/10V
C408 10NF
C404 0.33/50V
⑰
TM-BLOCK
R406 22K HI-FI:10K
R407 8.2K HI-FI:2.2K
R408 1.2K
C407 47/16
X. I. G MODEL ONLY
FROM POWER DRIVE
AL 5V AL 5V
PC 5V PC 5V
AL33V AL33V
FROM/TO SYSCON/SERVO
ST1 IIC CLK
ST2 IIC DATA
ST3 POSITIVE'L' (SW1)
ST4 L'CTL (SW2)
ST5 AFT
TO A2/NICAM
TA1 IIC DATA
TA2 IIC CLK
TA3 SIF OUT
TA4 TU A.OUT
FROM A/V
VT1 Fsc(4.43M)
TO I/O
FT4 TU A.OUT
FT3 TU V.OUT
FT1 RF A.IN
FT2 RF V.IN

4-10 OSD/VPS/PDC

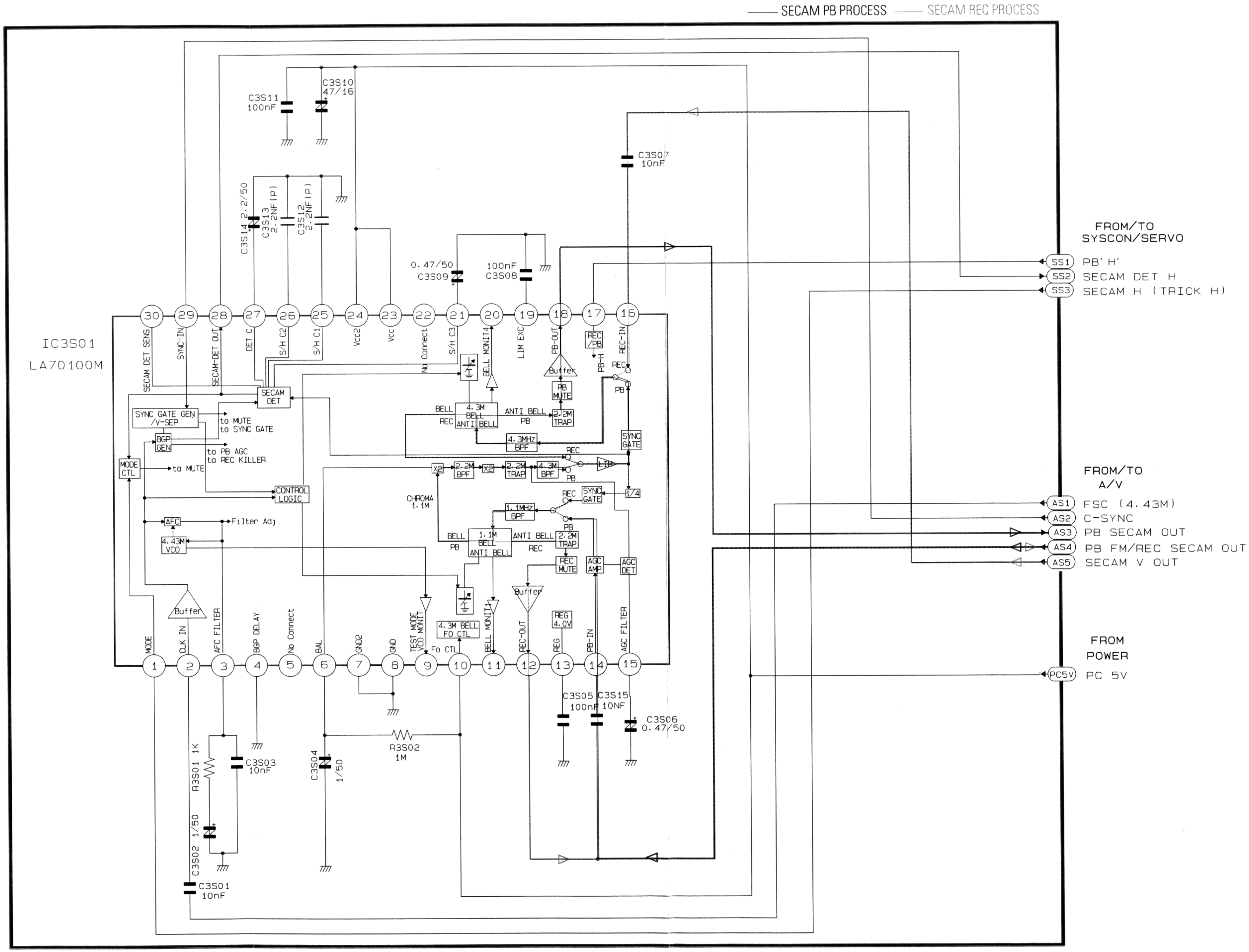

OSD VIDEO PROCESS (IN)
OSD VIDEO PROCESS (OUT)
IC6P01
LC74776-9821 256F PDC(EC.SONY)
LC74759-9820 256F OSD(M/EAST.CIS)
LC74775NM-9808 128F PDC(EC)
LC74758-9779 128F OSD(EC)
LC74783-9745 128F OSD (VCP)
LC74783-9735 128F OSD (SONY ASIA)
1 VSS1
2 XTALin
3 XTALout
4 CTRL1
5 SCL
6 OSNin
7 OSCout
8 SYNCjdg
9 CS
10 SCLK
11 SIN
12 VDD2
13 CPOUT
14 VCPIN
15 VSS3
30 VDD1
29 RST
28 CDLR
27 SDA
26 SEPout
25 SEPc
24 SYNin
23 VDD1
22 CVCR
21 CVin
20 VSS2
19 CVout
18 VDD3
17 NC
16 VCOR
C6P01 10nF
IIC CLOCK
SYNC DET
OSD STB
OSD CLK
OAD DATA
E.EUROPE C6P04.05 24PF
C6P04 27pF
C6P05 27pF
L6P05 27UH
R6P01 100 PDC OPTION
R6P03 2.7K
R6P04 10K
C6P07 4.7/50
C6P06 1nF
PDC OPTION
W315 VCP OPT
C6P11 1/50
R6P05 10K
W344 OSD OPTION
R6P02 100 PDC OPTION
C6P10 1/50
C6P02 120PF
OSD OPT
R6P09 000
2.2K:OSD ONLY
Q6P02 A733
R6P08 390
L6P03 22uH
C6P08 56pF
R6P06 5.6K
C6P13 100nF
C6P12 47/16
IIC DATA
OSD C-SYNC
R6P07 220
R6P10 220
OSD VIDEO IN
OSD VIDEO OUT
Q6P01 KSA733
C6P09 82P
TSB OPT
2FSC
FROM/TO AV
A01 OSD VIDEO IN
A02 2FSC
A03 OSD VIDEO OUT
FROM POWER DRIVE
PC5V PC5V
FROM/TO SYSCON/SERVO
OSD CLK
OAD DATA
OSD STB
IIC CLK
IIC DATA
SYNC DET
OS1 OSD CLK
OS2 OAD DATA
OS3 OSD STB
OS4 IIC CLK
OS5 IIC DATA
OS6 SYNC DET
⑱

4-11 OSD/VPS/PDC (B) (SLV-SE620/SE720/SE727/SE820/SX720/SX727)

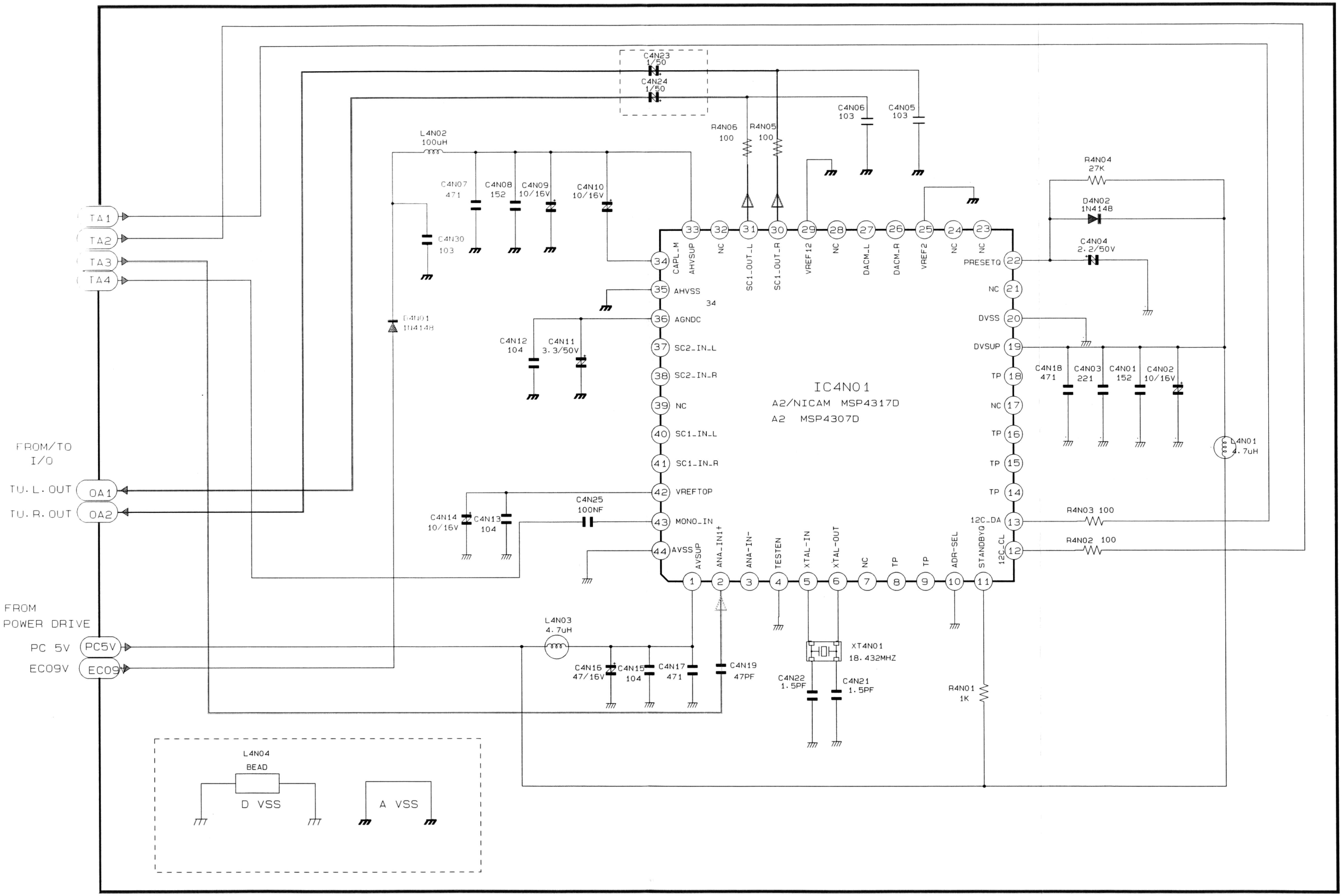


—— OSD VIDEO PROCESS (IN)
- - - - OSD VIDEO PROCESS (OUT)
LC74776-9821 256F PDC(EC·SONY)
LC74759-9820 256 OSD(M/EAST·CIS·SONY)
LC74775NM-9808 128F PDC(EC)
LC74758-9779 128F OSD(EC)
LC74783-9745 128F OSD (VCP)
IC6P01
1 VSS1
2 XTALin
3 XTALout
4 CTRL1
5 SCL
6 OSNin
7 OSCout
8 SYNCjdg
9 CS
10 SCLK
11 SIN
12 VDD2
13 CPOUT
14 VCPIN
15 VSS3
30 VDD1
29 RST
28 CDLR
27 SDA
26 SEPout
25 SEPc
24 SYNin
23 VDD1
22 CVCR
21 CVin
20 VSS2
19 CVout
18 VDD3
17 NC
16 VCOR
2FSC
IIC CLOCK
SYNC DET
OSD STB
OSD CLK
OAD DATA
C6P01 10nF
R6P01 100 PDC OPTION
C6P04 24PF
L6P05 27UH
C6P05 24PF
R6P03 2.7K
R6P04 10K
C6P07 4.7/50
C6P06 1nF
PDC OPTION
W315 VCP OPT
C6P11 1/50
R6P05 10K
W344 OSD OPTION
R6P02 100 PDC OPTION
C6P13 100nF
C6P12 47/16
C6P10 1/50
C6P02 120PF
OSD OPT
R6P09 JUMPER 2.2K:OSD ONLY
Q6P02 A733
R6P08 390
L6P03 22uH
C6P08 56pF
R6P07 220
R6P10 220
Q6P01 KSA733
C6P09 82P
TSB OPT
R6P06 5.6K
18
IIC DATA
OSD C-SYNC
OSD VIDEO IN
OSD VIDEO OUT
2FSC
FROM/TO AV
A01 OSD VIDEO IN
A02 2FSC
A03 OSD VIDEO OUT
FROM POWER DRIVE
PC5V PC5V
FROM/TO SYSCON/SERVO
OS1 OSD CLK
OS2 OAD DATA
OS3 OSD STB
OS4 IIC CLK
OS5 IIC DATA
OS6 SYNC DET
OSD CLK
OAD DATA
OSD STB
IIC CLK
IIC DATA
SYNC DET

4-12 SECAM; SLV-SE220B/SE620B/SE720B/SE820B Only

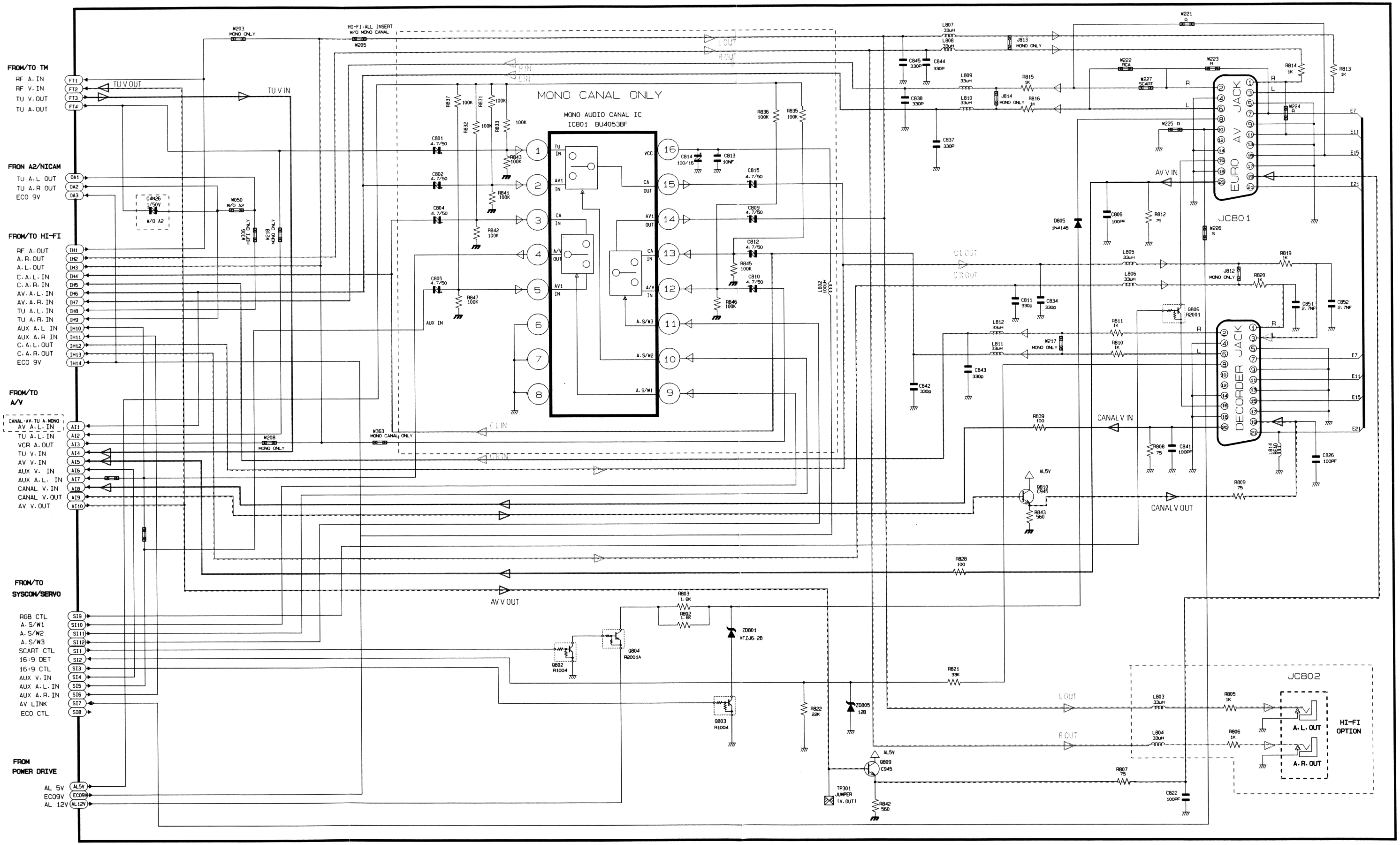

SECAM PB PROCESS
SECAM REC PROCESS
IC3S01
LA70100M
C3S11 100nF
C3S10 47/16
C3S14 2.2/50
C3S13 2.2NF(P)
C3S12 2.2NF(P)
0.47/50 C3S09
100nF C3S08
C3S07 10nF
30 SECAM DET SENS
29 SYNC-IN
28 SECAM-DET OUT
27 DET C
26 S/H C2
25 S/H C1
24 Vcc2
23 Vcc
22 No Connect
21 S/H C3
20 BELL MONIT4
19 LIM EXC
18 PB-OUT
17 PB-H
16 REC-IN
REC /PB
Buffer
PB MUTE
REC
PB
SECAM DET
SYNC GATE GEN /V-SEP
to MUTE
to SYNC GATE
BGP GEN
to PB AGC
to REC KILLER
MODE CTL
to MUTE
CONTROL LOGIC
AFC
Filter Adj
4.43M VCO
Buffer
BELL
REC
4.3M BELL ANTI BELL
ANTI BELL
PB
2.2M TRAP
4.3MHz BPF
REC
SYNC GATE
x2
2.2M BPF
x2
2.2M TRAP
4.3M BPF
LIM
PB
CHROMA 1.1M
REC
SYNC GATE
1/4
1.1MHz BPF
PB
BELL
PB
1.1M BELL ANTI BELL
ANTI BELL
REC
2.2M TRAP
REC MUTE
AGC AMP
AGC DET
Buffer
REG 4.0V
4.3M BELL FO CTL
Fo CTL
1 MODE
2 CLK IN
3 AFC FILTER
4 BGP DELAY
5 No Connect
6 BAL
7 GND2
8 GND
9 TEST MODE VCO MONIT
10
11 BELL MONIT1
12 REC-OUT
13 REG
14 PB-IN
15 AGC FILTER
C3S05 100nF
C3S15 10NF
C3S06 0.47/50
R3S02 1M
C3S04 1/50
R3S01 1K
C3S03 10nF
C3S02 1/50
C3S01 10nF
FROM/TO SYSCON/SERVO
SS1 PB'H'
SS2 SECAM DET H
SS3 SECAM H (TRICK H)
FROM/TO A/V
AS1 FSC (4.43M)
AS2 C-SYNC
AS3 PB SECAM OUT
AS4 PB FM/REC SECAM OUT
AS5 SECAM V OUT
FROM POWER
PC5V PC 5V

4-13 A2/NICAM; Hi-Fi Models Only

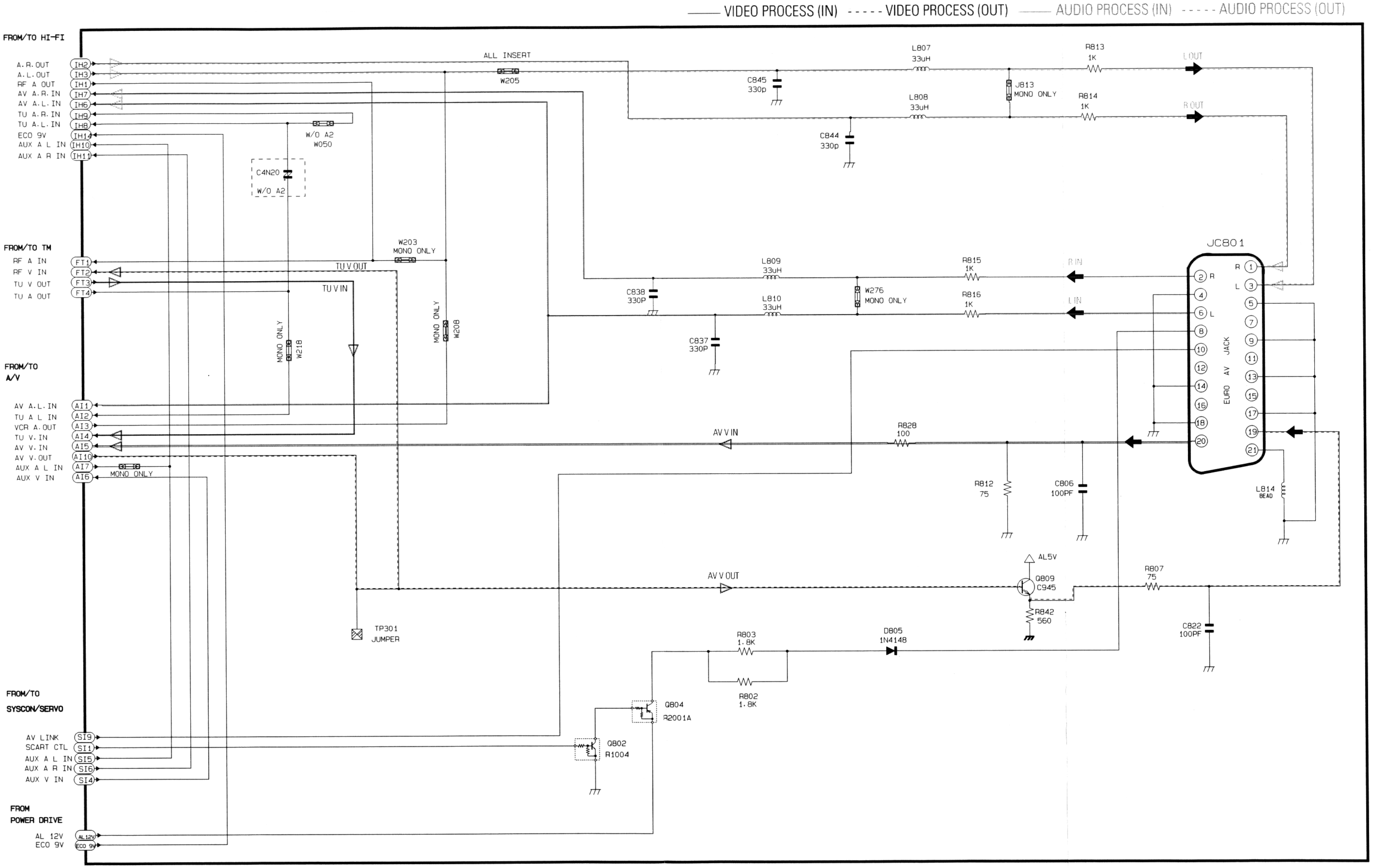

C4N23
1/50
C4N24
1/50
C4N06
103
C4N05
103
R4N06
100
R4N05
100
L4N02
100uH
C4N07
471
C4N08
152
C4N09
10/16V
C4N10
10/16V
C4N30
103
D4N01
1N4148
R4N04
27K
D4N02
1N4148
C4N04
2.2/50V
TA1
TA2
TA3
TA4
CAPL_M
AHVSUP
NC
SC1_OUT_L
SC1_OUT_R
VREF12
NC
DACM_L
DACM_R
VREF2
NC
NC
PRESETQ
AHVSS
34
AGNDC
SC2_IN_L
SC2_IN_R
NC
SC1_IN_L
SC1_IN_R
VREFTOP
MONO_IN
AVSS
NC
DVSS
DVSUP
TP
NC
TP
TP
TP
I2C_DA
I2C_CL
C4N12
104
C4N11
3.3/50V
IC4N01
A2/NICAM MSP4317D
A2 MSP4307D
C4N18
471
C4N03
221
C4N01
152
C4N02
10/16V
L4N01
4.7uH
FROM/TO
I/O
TU.L.OUT
OA1
TU.R.OUT
OA2
C4N25
100NF
C4N14
10/16V
C4N13
104
R4N03 100
R4N02 100
AVSUP
ANA_IN1+
ANA-IN-
TESTEN
XTAL-IN
XTAL-OUT
NC
TP
TP
ADR-SEL
STANDBYQ
FROM
POWER DRIVE
PC 5V
PC5V
EC09V
EC09V
L4N03
4.7uH
C4N16
47/16V
C4N15
104
C4N17
471
C4N19
47PF
XT4N01
18.432MHZ
C4N22
1.5PF
C4N21
1.5PF
R4N01
1K
L4N04
BEAD
D VSS
A VSS

4-14 Input-Output (2 Scart Jack)

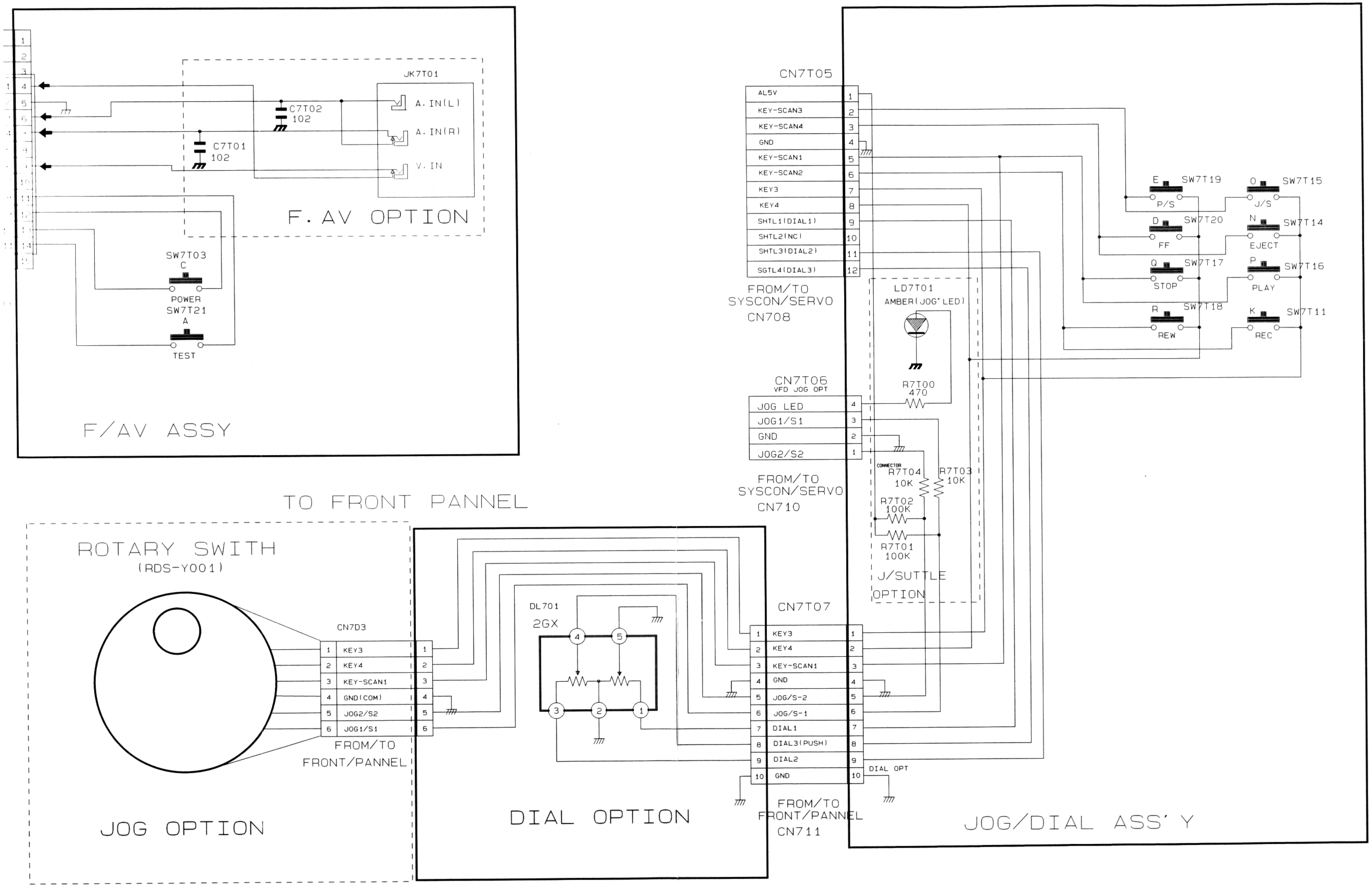
—— VIDEO PROCESS (IN) - - - - VIDEO PROCESS (OUT) —— AUDIO PROCESS (IN) - - - - AUDIO PROCESS (OUT)


FROM/TO TM
RF A.IN FT1
RF V.IN FT2
TU V.OUT FT3
TU A.OUT FT4
FRON A2/NICAM
TU A.L OUT OA1
TU A.R OUT OA2
ECO 9V OA3
FROM/TO HI-FI
RF A.OUT IH1
A.R.OUT IH2
A.L.OUT IH3
C.A.L.IN IH4
C.A.R.IN IH5
AV.A.L.IN IH6
AV.A.R.IN IH7
TU A.L.IN IH8
TU A.R.IN IH9
AUX A.L IN IH10
AUX A.R IN IH11
C.A.L.OUT IH12
C.A.R.OUT IH13
ECO 9V IH14
FROM/TO A/V
CANAL·AV·TU A.MONO
AV A.L.IN AI1
TU A.L.IN AI2
VCR A.OUT AI3
TU V.IN AI4
AV V.IN AI5
AUX V.IN AI6
AUX A.L.IN AI7
CANAL V.IN AI8
CANAL V.OUT AI9
AV V.OUT AI10
FROM/TO SYSCON/SERVO
RGB CTL SI9
A.S/W1 SI10
A.S/W2 SI11
A.S/W3 SI12
SCART CTL SI1
16:9 DET SI2
16:9 CTL SI3
AUX V.IN SI4
AUX A.L.IN SI5
AUX A.R.IN SI6
AV LINK SI7
ECO CTL SI8
FROM POWER DRIVE
AL 5V AL5V
ECO9V ECO9V
AL 12V AL12V
TU V OUT
TU V IN
MONO CANAL ONLY
MONO AUDIO CANAL IC
IC801 BU4053BF
HI-FI·ALL INSERT W/O MONO CANAL
W205
W203 MONO ONLY
C4N26 1/50V W/O A2
W050 W/O A2
W208 MONO ONLY
W363 MONO CANAL ONLY
AUX IN
L OUT
R OUT
R IN
L IN
CL OUT
CR OUT
CL IN
CR IN
AV V IN
AV V OUT
CANAL V IN
CANAL V OUT
L OUT
R OUT
EURO AV JACK
JC801
DECORDER JACK
JC802
A.L.OUT
A.R.OUT
HI-FI OPTION
Q802 R1004
Q803 R1004
Q804 R2001A
Q806 R2001
Q809 C945
Q810 C945
ZD801 HTZJ6.2B
ZD805 12B
D805 1N4148
TP301 JUMPER (V.OUT)
AL5V
E7
E11
E15
E21

4-15 Input-Output (1 Scart Jack) ;SLV-SE620D/SE620N Only

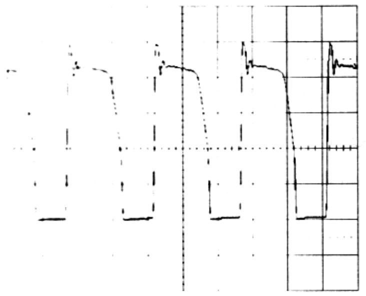

VIDEO PROCESS (IN)
VIDEO PROCESS (OUT)
AUDIO PROCESS (IN)
AUDIO PROCESS (OUT)
FROM/TO HI-FI
A.R.OUT
A.L.OUT
RF A OUT
AV A.R.IN
AV A.L.IN
TU A.R.IN
TU A.L.IN
ECO 9V
AUX A L IN
AUX A R IN
IH2
IH3
IH1
IH7
IH6
IH9
IH8
IH14
IH10
IH11
W/O A2
W050
C4N20
W/O A2
ALL INSERT
W205
FROM/TO TM
RF A IN
RF V IN
TU V OUT
TU A OUT
FT1
FT2
FT3
FT4
W203
MONO ONLY
TU V OUT
TU V IN
MONO ONLY
W218
MONO ONLY
W208
FROM/TO
A/V
AV A.L.IN
TU A L IN
VCR A.OUT
TU V.IN
AV V.IN
AV V.OUT
AUX A L IN
AUX V IN
AI1
AI2
AI3
AI4
AI5
AI10
AI7
AI6
MONO ONLY
TP301
JUMPER
FROM/TO
SYSCON/SERVO
AV LINK
SCART CTL
AUX A L IN
AUX A R IN
AUX V IN
SI9
SI1
SI5
SI6
SI4
FROM
POWER DRIVE
AL 12V
ECO 9V
AL12V
ECO 9V
L807
33uH
C845
330p
L808
33uH
C844
330p
J813
MONO ONLY
R813
1K
L OUT
R814
1K
R OUT
L809
33uH
C838
330P
L810
33uH
C837
330P
W276
MONO ONLY
R815
1K
R IN
R816
1K
L IN
JC801
R
L
R
L
EURO AV JACK
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
AV V IN
R828
100
R812
75
C806
100PF
L814
BEAD
AL5V
Q809
C945
R842
560
AV V OUT
R807
75
C822
100PF
R803
1.8K
D805
1N4148
R802
1.8K
Q804
R2001A
Q802
R1004

4-16 Sub

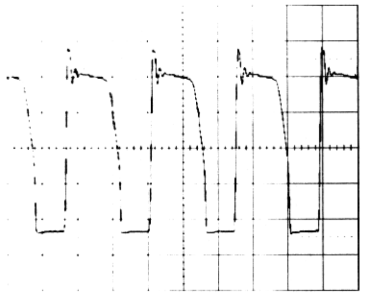

JK7T01
A. IN(L)
A. IN(R)
V. IN
C7T02
102
C7T01
102
F. AV OPTION
SW7T03
C
POWER
SW7T21
A
TEST
F/AV ASSY
TO FRONT PANNEL
ROTARY SWITH
(RDS-Y001)
CN7D3
KEY3
KEY4
KEY-SCAN1
GND(COM)
JOG2/S2
JOG1/S1
FROM/TO
FRONT/PANNEL
JOG OPTION
DL701
2GX
DIAL OPTION
CN7T05
AL5V
KEY-SCAN3
KEY-SCAN4
GND
KEY-SCAN1
KEY-SCAN2
KEY3
KEY4
SHTL1(DIAL1)
SHTL2(NC)
SHTL3(DIAL2)
SGTL4(DIAL3)
FROM/TO
SYSCON/SERVO
CN708
CN7T06
VFD JOG OPT
JOG LED
JOG1/S1
GND
JOG2/S2
FROM/TO
SYSCON/SERVO
CN710
LD7T01
AMBER(JOG' LED)
R7T00
470
CONNECTOR
R7T04
10K
R7T03
10K
R7T02
100K
R7T01
100K
J/SUTTLE
OPTION
CN7T07
KEY3
KEY4
KEY-SCAN1
GND
JOG/S-2
JOG/S-1
DIAL1
DIAL3(PUSH)
DIAL2
GND
DIAL OPT
FROM/TO
FRONT/PANNEL
CN711
E SW7T19
P/S
O SW7T15
J/S
D SW7T20
FF
N SW7T14
EJECT
Q SW7T17
STOP
P SW7T16
PLAY
R SW7T18
REW
K SW7T11
REC
JOG/DIAL ASS' Y

S.M.P.S. BLOCK

❶ Q1SR01-COLLECTOR
POWER OFF/380Vp-p

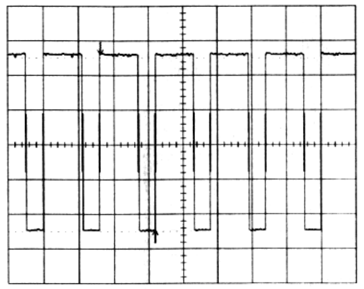


❷ Q1SR01-COLLECTOR
POWER ON/400Vp-p

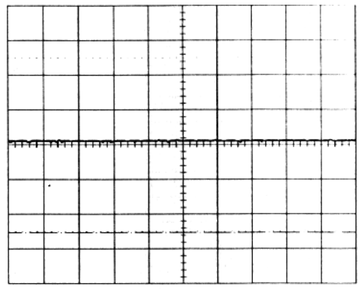


SYSTEM CONTROL/SERVO BLOCK

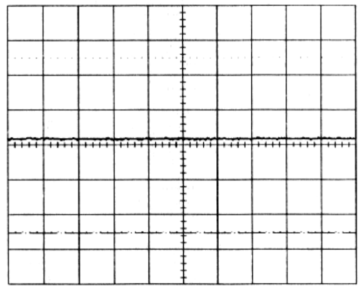
❸ IC601-3
PB/5.1Vp-p



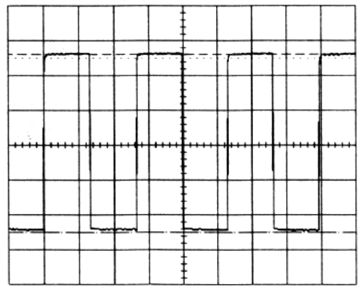
❹ IC601-9
PB/2.7Vp-p



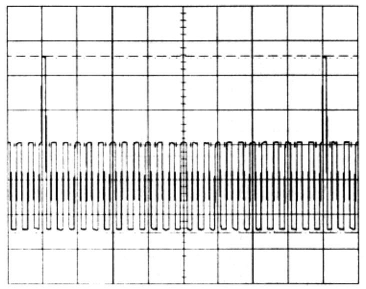
❺ IC601-10
PB/2.7Vp-p



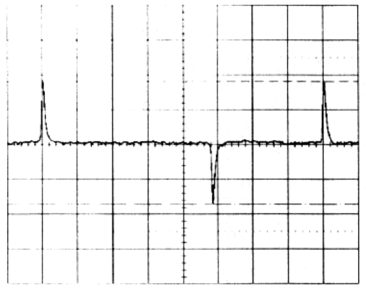
❻ CN604-93
PB/5.1Vp-p



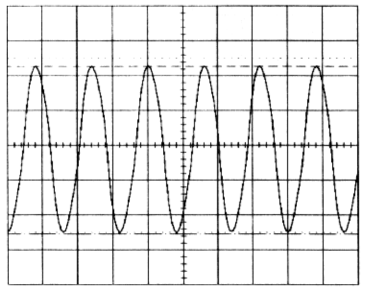
❼ IC610-97
PB/5.1V



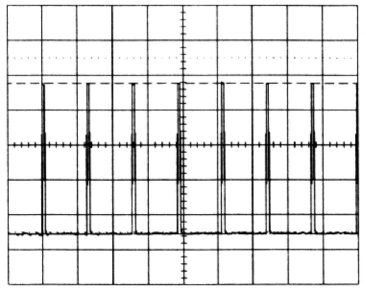
❽ TP601-89
PB/3.6Vp-p



❾ IC601-18
4.8Vp-p

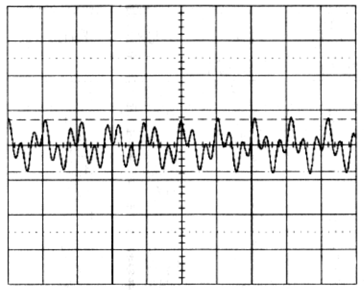


❿ IC601-100
PB/4.3Vp-p

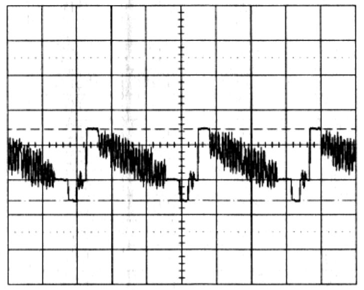


AUDIO/VIDEO BLOCK

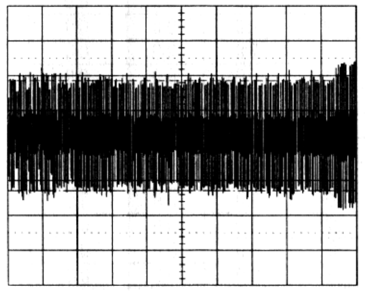
⓫ IC301-100
REC/1.5Vp-p



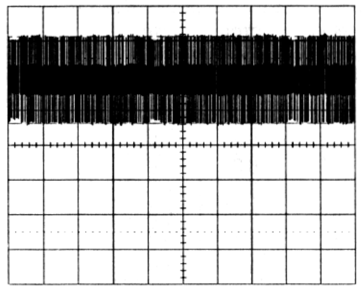
⓬ IC301-65
PB/2.1Vp-p



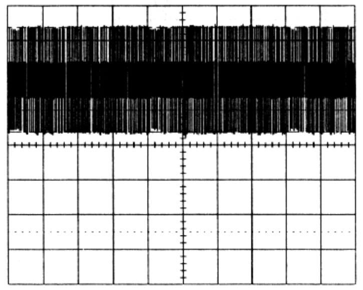
⓭ IC301-21
PB/320mVp-p



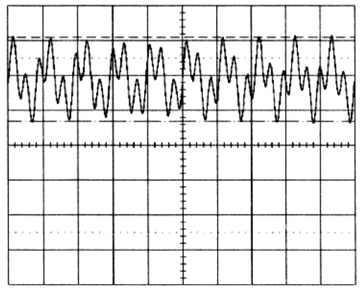
⓮ IC301-88
REC(LP)/2.5Vp-p



⓯ IC301-94
REC(SP)/3.0Vp-p

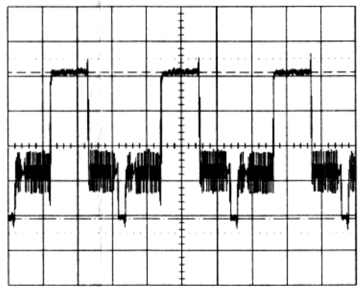


⓰ IC301-11
REC/102Vp-p



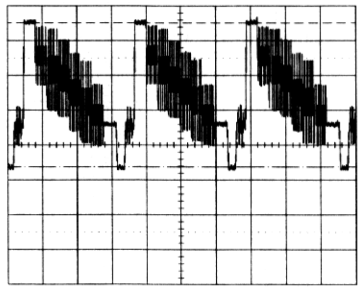
TM BLOCK

⓱ TM401-24
0.9Vp-p



O. S. D. BLOCK

⓲ IC6P01-19
2.1Vp-p



LOGIC BLOCK

PIN / MODE	PLAY	STOP	REC
IC601	UPD784927GF		
1	0.0	0.0	4.8
2	0.0	0.0	0.0
3	3.6	0.0	3.6
4	3.1	5.2	0.0
5	0.0	5.2	5.1
6	5.1	5.2	5.1
7	5.2	5.2	5.1
8	4.2	4.1	4.1
9	2.6	2.6	2.6
10	2.7	5.2	2.7
11	5.2	5.2	5.2
12	2.1	0.3	2.3
13	2.3	2.1	2.2
14	5.2	5.2	5.2
15	2.1	2.2	2.1
16	2.5	2.5	2.4
17	0.0	0.0	0.0
18	2.4	2.4	2.4
19	2.2	2.2	2.8
20	5.2	5.2	5.2
21	0.0	0.0	0.0
22	0.0	0.0	0.0
23	2.3	2.7	0.0
24	2.7	2.3	2.8
25	0.0	0.0	0.0
26	0.0	0.0	0.0
27	4.6	4.6	4.6
28	4.6	4.6	4.5
29	2.4	2.8	2.8
30	0.0	5.2	0.0
31	0.0	0.0	0.0
32	4.7	4.7	4.7
33	5.1	0.0	0.0
34	1.2	1.4	0.7
35	0.0	0.0	0.0
36	5.2	5.2	5.2
37	1.4	1.3	0.7
38	0.0	0.0	5.1
39	0.0	0.0	0.0
40	0.0	0.0	0.0
41	5.2	5.2	5.2
42	5.2	5.1	5.1
43	0.0	0.0	5.1
44	0.0	0.0	0.0
45	0.0	0.0	0.0
46	5.2	5.1	5.1
47	5.2	5.2	5.2
48	5.2	5.2	5.2
49	5.2	5.2	5.2
50	0.1	0.1	5.2

PIN / MODE	PLAY	STOP	REC
IC601	UPD784927GF		
51	0.0	0.0	0.0
52	0.0	0.1	0.1
53	5.2	0.1	0.2
54	5.2	5.2	5.2
55	5.2	5.2	5.2
56	5.2	5.2	5.2
57	0.0	0.0	0.0
58	5.2	5.2	5.2
59	5.1	5.2	5.2
60	3.3	5.2	5.2
61	5.2	5.2	5.2
62	1.2	2.5	1.5
63	0.0	0.0	0.0
64	5.2	0.0	5.2
65	0.0	0.0	0.0
66	4.7	4.8	4.7
67	5.2	0.0	0.0
68	0.0	0.0	0.0
69	5.2	0.0	5.2
70	5.2	1.4	5.2
71	0.0	0.0	0.0
72	0.0	0.0	0.0
73	0.0	0.0	0.0
74	0.0	0.0	0.0
75	1.6	1.2	1.5
76	5.2	5.2	5.2
77	5.1	5.2	5.1
78	0.0	0.0	0.0
79	0.0	0.4	0.4
80	3.7	3.7	3.7
81	0.1	0.2	0.2
82	2.3	0.6	0.0
83	1.3	0.0	0.0
84	1.4	1.8	0.0
85	2.6	2.6	2.8
86	2.6	2.6	2.2
87	2.6	2.6	2.6
88	2.6	2.6	2.6
89	2.6	2.6	0.0
90	2.6	2.6	2.6
91	0.0	0.0	0.0
92	5.2	5.2	5.2
93	2.6	5.1	2.6
94	1.4	1.7	1.4
95	1.3	1.5	1.3
96	1.4	1.7	1.3
97	1.3	0.1	1.3
98	0.1	0.1	0.1
99	0.1	0.1	0.3
100	0.2	0.2	0.2

PIN / MODE	PLAY	STOP	REC
IC605	24LCXX		
1	0.0	0.0	0.0
2	0.0	0.0	0.0
3	0.0	0.0	0.0
4	0.0	0.0	0.0
5	5.2	5.2	5.2
6	0.0	0.0	0.0
7	4.6	4.7	4.7
8	4.7	4.6	4.6
IC604	KA7533		
1	5.2	5.2	5.2
2	0.0	0.0	0.0
3	5.0	5.1	5.0

LOGIC BLOCK ("B" MODELS ONLY)

PIN / MODE	PLAY	STOP	REC
IC701	UPD7801232		
1	5.18	5.18	5.17
2	0.0	0.0	0.0
3	2.78	2.82	2.8
4	0.0	3.03	3.03
5	0.0	0.0	0.0
6	5.19	5.19	5.15
7	5.18	5.19	5.14
8	2.12	0.075	0.0
9	2.24	2.23	2.28
10	0.0	0.0	0.0
11	0.0	0.0	0.0
12	0.0009	0.0008	0.001
13	0.0	0.0	0.0
14	0.0	0.0	0.0
15	1.58	1.44	1.45
16	0.0009	0.0009	0.001
17	0.0	0.0	0.0
18	0.0	0.0	0.0
19	0.0	0.0	0.0
20	0.0	0.0	0.0
21	0.0	0.0	0.0
22	0.0	0.0	0.0
23	0.0	0.0	0.0
24	5.18	5.18	5.18
25	5.18	5.18	5.18
26	0.0	0.0	0.0
27	0.0	0.0	0.0
28	0.0	0.0	0.0
29	0.0	0.0	0.0
30	0.0	0.0	0.0
31	0.0	0.0	0.0
32	0.021	0.0	0.0
33	0.0	0.0	0.0
34	0.0	0.0	0.0
35	0.0	0.0	0.0
36	0.0	0.0	0.0
37	0.0	0.0	0.0
38	0.0	0.0	0.0
39	0.0	0.0	0.0
40	0.0	0.0	0.0
41	0.24	0.0	0.0
42	0.01	0.0	0.0
43	0.03	0.0	0.0
44	0.0002	0.0	0.0
45	0.0004	0.0	0.0
46	5.17	5.16	5.17
47	5.18	0.0	5.17
48	0.0002	0.0	0.0
49	0.0002	0.0	0.0
50	0.0002	0.0	0.0

PIN / MODE	PLAY	STOP	REC
IC701	UPD780123		
51	0.12	0.0	0.0
52	0.21	0.0	0.0
53	0.2	0.0	0.0
54	0.06	0.0	0.0
55	0.0	0.0	0.0
56	0.0	0.0	0.0
57	0.0	0.0	0.0
58	0.0	0.0	0.0
59	5.17	5.18	5.17
60	0.0	0.0	0.0
61	0.0	0.0	0.0
62	0.0	0.0	0.0
63	0.0	0.0	0.0
64	0.0	0.0	0.0
65	0.0	0.0	0.0
66	0.0	0.0	0.0
67	0.0	0.0	0.0
68	0.0	0.0	0.0
69	0.0	0.0	0.0
70	0.0	0.0	0.0
71	0.0	0.0	0.0
72	0.0	0.0	0.0
73	0.0	0.0	0.0
74	0.0	0.0	0.0
75	0.0	0.0	0.0
76	0.0	0.0	0.0
77	0.0	0.0	0.0
78	0.0	0.0	0.0
79	0.0	0.0	0.0
80	0.0	0.0	0.0

AV BLOCK

PIN / MODE	PLAY	STOP	REC
IC301	LA71750M		
1	5.2	5.2	0.7
2	0.0	0.0	0.6
3	2.3	2.3	2.4
4	0.3	0.4	0.8
5	2.3	2.3	2.3
6	2.3	2.3	2.2
7	2.3	2.3	2.2
8	2.3	2.3	2.2
9	2.2	2.2	2.2
10	2.3	2.2	2.3
11	2.4	2.3	2.3
12	0.0	0.0	0.0
13	2.2	2.2	2.2
14	0.0	0.0	0.0
15	2.3	2.3	2.2
16	0.2	5.2	5.1
17	2.3	2.3	2.2
18	5.2	5.2	5.1
19	4.1	4.1	4.0
20	0.0	0.0	0.0
21	1.9	3.2	3.2
22	2.6	2.6	2.6
23	2.6	2.6	2.6
24	5.0	5.0	5.0
25	3.5	0.1	0.1
26	1.3	1.5	1.5
27	2.1	2.1	2.1
28	4.0	4.1	4.0
29	2.6	2.6	2.7
30	0.4	0.0	0.0
31	1.4	1.3	1.2
32	4.7	4.7	4.7
33	2.9	3.0	2.9
34	0.0	0.0	0.0
35	2.0	2.0	2.0
36	3.0	3.0	3.0
37	1.9	2.0	1.9
38	2.1	2.1	2.0
39	9.5	9.5	9.4
40	0.0	0.0	0.0
41	0.0	0.0	0.0
42	5.1	5.2	5.1
43	2.4	2.4	2.4
44	4.1	0.0	0.0
45	2.5	2.5	2.5
46	2.6	2.7	4.6
47	4.2	4.2	4.2
48	2.9	3.0	3.0
49	3.8	3.0	3.0
50	1.9	1.9	1.9

PIN / MODE	PLAY	STOP	REC
IC301	LA71750M		
51	0.0	0.0	0.0
52	1.9	1.9	1.9
53	2.4	2.4	2.4
54	1.9	1.9	1.9
55	5.2	5.2	5.2
56	2.2	2.3	2.3
57	2.2	2.0	2.0
58	2.8	3.1	3.1
59	3.0	2.9	2.9
60	1.6	1.5	1.5
61	1.7	19.0	1.9
62	0.0	0.0	0.0
63	1.2	1.2	1.2
64	0.0	0.0	0.0
65	1.5	1.8	1.8
66	5.2	5.2	5.2
67	0.2	0.2	0.2
68	4.7	4.7	4.7
69	4.5	4.7	4.5
70	2.8	5.2	2.8
71	0.0	3.3	3.3
72	5.0	5.0	5.0
73	1.9	2.2	2.2
74	2.6	2.5	2.5
75	0.7	2.4	2.4
76	0.8	2.4	2.4
77	1.6	1.5	1.5
78	3.4	2.6	2.5
79	1.9	1.9	2.5
80	0.9	0.9	4.2
81	1.1	1.1	1.1
82	0.0	0.0	0.0
83	2.6	0.7	0.0
84	2.7	0.6	0.0
85	0.0	0.0	1.0
86	0.4	0.4	0.0
87	0.7	1.9	2.5
88	0.7	1.9	0.7
89	0.7	1.9	0.7
90	0.7	1.9	0.7
91	5.2	5.2	4.1
92	0.0	0.0	0.0
93	1.9	1.9	4.3
94	1.9	1.9	4.3
95	1.9	1.9	4.3
96	1.9	1.9	4.4
97	0.0	0.0	0.0
98	2.3	2.3	2.3
99	2.3	2.3	2.3
100	2.3	2.3	2.4

HI-FI BLOCK

PIN MODE	PLAY	STOP	REC
IC501	LA72646M		
1	0.0	0.0	0.0
2	2.5	2.5	2.5
3	9.5	9.5	9.5
4	2.5	2.5	2.5
5	4.9	4.9	4.8
6	2.0	1.9	1.9
7	0.0	0.0	0.0
8	0.0	0.0	0.0
9	0.0	0.0	0.0
10	0.0	0.0	0.0
11	0.0	0.0	0.0
12	4.8	4.8	4.8
13	2.6	2.0	2.0
14	2.5	2.5	2.5
15	4.8	4.9	4.8
16	2.5	2.5	2.5
17	0.0	0.3	0.3
18	1.3	0.0	0.0
19	2.6	2.5	2.5
20	2.2	2.5	2.5
21	2.6	2.5	2.5
22	2.6	2.5	2.5
23	4.2	0.0	0.0
24	1.9	0.1	3.9
25	0.0	0.0	0.0
26	1.9	0.1	3.9
27	1.9	0.1	3.9
28	0.0	0.5	2.1
29	0.0	0.0	0.0
30	2.1	4.1	3.9
31	2.3	4.1	3.9
32	4.8	4.4	4.8
33	2.2	0.4	0.0
34	3.5	2.5	2.5
35	2.5	0.0	0.0
36	2.7	4.9	4.8
37	0.0	0.4	0.0
38	4.4	4.6	4.5
39	4.5	4.6	4.5
40	2.8	0.0	2.3
41	2.6	2.5	2.5
42	2.5	2.5	2.5
43	2.6	2.5	2.5
44	2.6	2.5	2.5
45	0.2	0.0	0.0
46	4.8	4.9	0.4
47	2.5	2.5	5.0
48	2.6	2.0	2.0
49	0.0	0.0	0.0
50	0.0	0.0	0.0

AV-LINK BLOCK

PIN MODE	PLAY	STOP	REC
IC750			
1	0.0	0.0	0.0
2	0.0	0.0	0.0
3	0.0	0.0	0.0
4	0.0	0.0	0.0
5	0.0	0.0	0.0
6	0.0	0.0	0.0
7	0.0	0.0	0.0
8	0.0	0.0	0.0
9	0.0	0.0	0.0
10	5.1	5.1	5.1
11	5.1	0.0	0.0
12	0.0	0.0	0.0
13	0.0	0.0	0.0
14	3.0	3.0	3.1
15	2.7	2.7	2.8
16	0.0	0.0	0.0
17	5.1	5.1	5.1
18	5.1	5.1	5.1
19	0.0	0.0	0.0
20	5.1	5.1	5.1
21	0.0	0.0	0.0
22	0.9	0.7	0.3
23	5.1	5.1	5.1
24	5.0	5.1	5.0
25	1.4	1.3	1.6
26	2.3	2.3	2.5
27	2.3	2.1	5.1
28	5.1	5.1	5.1
29	0.0	0.0	0.0
30	0.0	0.0	0.0
31	0.0	0.0	0.0
32	5.0	5.1	5.0
33	0.0	0.0	0.2
34	0.0	0.0	0.0
35	0.0	0.0	0.0
36	0.0	0.0	0.0
37	0.0	0.0	0.0
38	5.1	5.1	5.1
39	0.0	0.0	0.0
40	0.0	0.0	0.0
41	0.0	0.0	0.0
42	0.0	0.0	0.0
43	0.0	0.0	0.0
44	0.0	0.0	0.0

A2-NICAM BLOCK

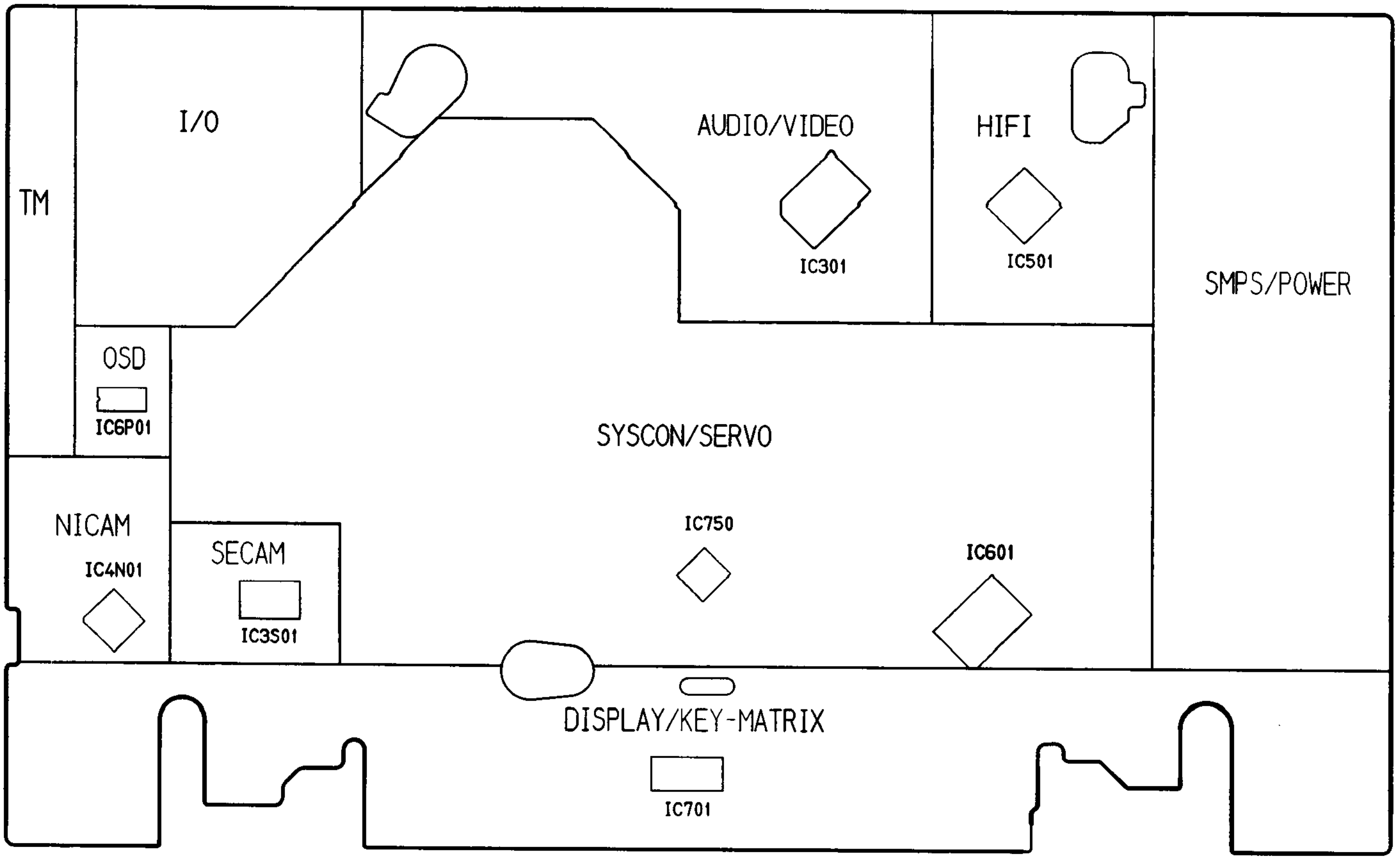
PIN MODE	PLAY	STOP	REC
IC701	MSP4317D		
1	5.1	5.1	5.1
2	1.5	1.5	1.5
3	1.5	0.0	1.5
4	0.0	0.0	0.0
5	2.4	2.4	2.4
6	2.3	2.3	2.2
7	1.5	1.5	0.8
8	0.0	0.0	0.0
9	0.0	0.0	0.0
10	0.0	0.0	0.0
11	5.1	5.1	5.1
12	4.7	4.8	4.5
13	4.7	4.6	4.5
14	2.5	2.5	2.5
15	2.5	2.5	2.5
16	0.0	5.0	5.0
17	0.8	3.2	0.2
18	1.6	3.2	0.3
19	5.1	5.1	5.1
20	0.0	0.0	0.0
21	1.0	3.1	0.2
22	5.1	5.1	5.1
23	0.0	0.0	0.0
24	0.0	0.0	0.0
25	0.0	0.0	0.0
26	0.1	0.1	0.1
27	0.1	0.1	0.1
28	0.1	0.1	0.1
29	0.0	0.0	0.0
30	3.8	3.8	0.4
31	3.8	3.8	0.0
32	0.0	0.0	0.0
33	8.7	8.8	8.8
34	7.8	7.8	7.8
35	0.0	0.0	0.0
36	3.8	3.8	3.8
37	0.1	0.0	0.0
38	0.0	0.4	0.0
39	0.0	0.0	0.0
40	3.8	3.8	3.8
41	3.8	3.8	3.8
42	2.6	2.6	2.6
43	3.8	3.8	3.8
44	0.0	0.0	0.0

SECAM BLOCK

PIN MODE	PLAY	STOP	REC
IC3S01	LA70100M		
1	0.0	0.0	0.0
2	2.4	0.1	2.4
3	3.4	0.4	3.4
4	0.0	0.0	0.0
5	0.0	0.0	0.0
6	3.7	0.1	4.7
7	0.0	0.0	0.0
8	0.0	0.0	0.0
9	3.1	0.0	3.1
10	5.1	0.1	5.1
11	2.5	0.1	2.2
12	2.0	0.0	3.2
13	4.0	0.0	4.0
14	2.6	0.0	2.6
15	2.0	0.3	3.1
16	3.2	0.3	3.2
17	5.2	0.0	0.0
18	3.4	0.0	0.1
19	2.2	0.1	2.2
20	2.3	0.0	0.0
21	2.0	0.3	2.0
22	0.0	0.0	0.0
23	5.1	0.1	5.1
24	5.1	0.1	5.1
25	3.0	0.0	3.2
26	2.9	0.0	3.2
27	2.1	0.0	2.1
28	0.1	0.1	0.2
29	1.6	0.0	0.1
30	2.1	0.0	2.1

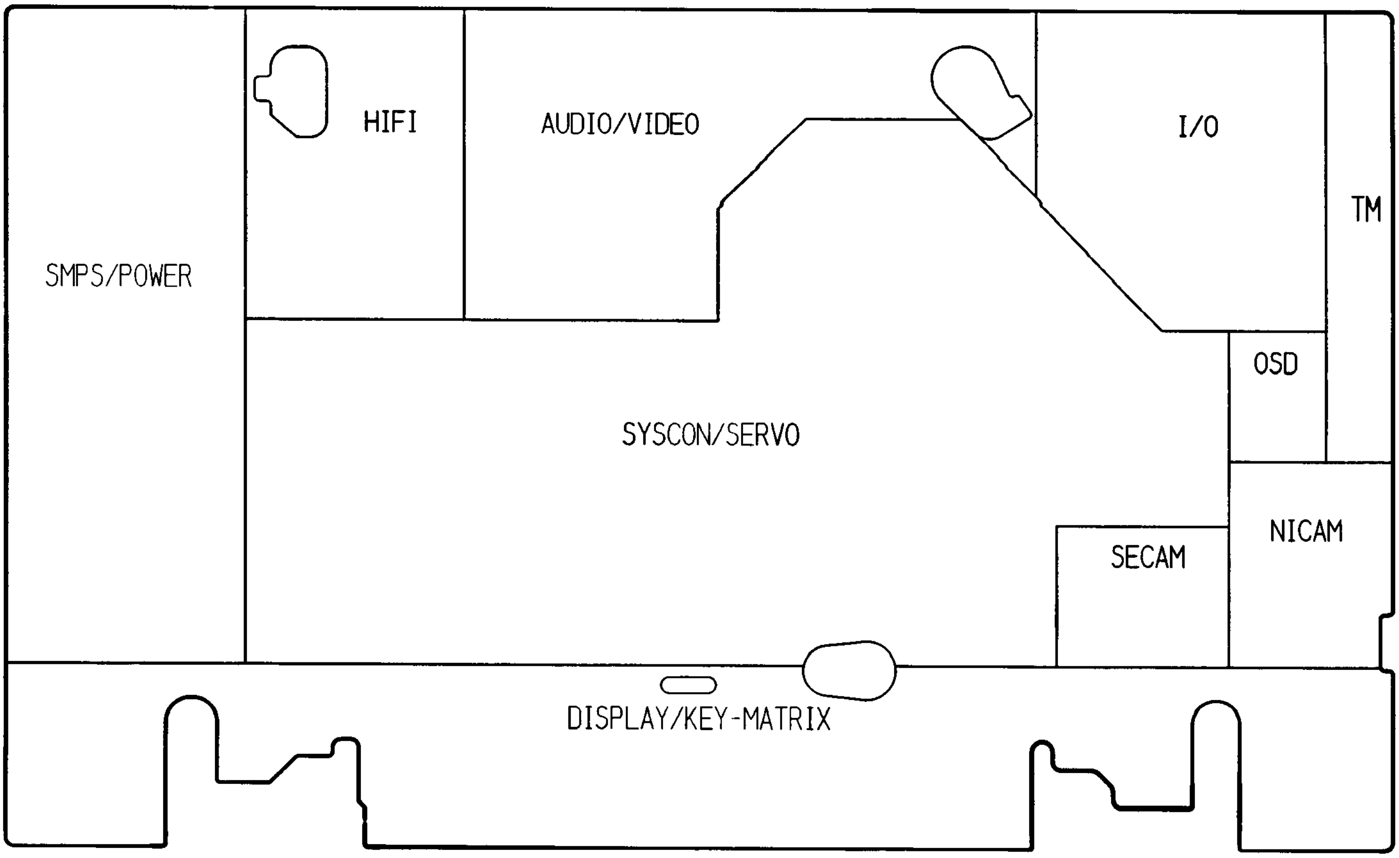
VPS/PDC BLOCK

PIN MODE	PLAY	STOP	REC
IC6P01	LC747XX		
1	0.0	0.0	0.0
2	2.7	2.7	2.7
3	5.1	5.1	5.1
4	5.1	5.1	5.1
5	4.6	4.7	4.5
6	2.5	2.5	2.5
7	2.6	2.6	2.8
8	5.1	0.0	0.0
9	4.1	4.4	0.0
10	5.1	5.1	5.1
11	5.2	5.2	5.1
12	5.1	5.1	5.1
13	2.2	2.3	2.3
14	2.2	2.3	2.3
15	0.0	0.0	0.0
16	0.9	1.0	1.0
17	0.0	0.0	0.0
18	5.1	5.1	5.1
19	1.9	1.7	1.7
20	0.0	0.0	0.0
21	1.9	1.8	1.8
22	0.6	1.0	1.1
23	5.1	5.1	5.1
24	3.0	3.1	3.1
25	2.5	2.5	2.5
26	4.6	5.0	5.0
27	4.6	4.6	4.7
28	3.7	3.7	3.7
29	5.1	5.1	5.1
30	5.1	5.1	5.1


TM
I/O
AUDIO/VIDEO
HIFI
SMPS/POWER
IC301
IC501
OSD
IC6P01
SYSCON/SERVO
NICAM
IC4N01
SECAM
IC3S01
IC750
IC601
DISPLAY/KEY-MATRIX
IC701

Conductor Side

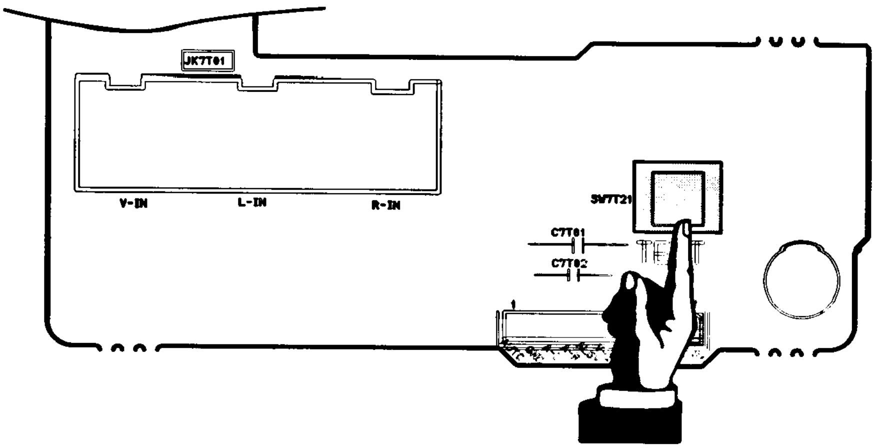
◆ Block Identification of Main PCB


SMPS/POWER
HIFI
AUDIO/VIDEO
I/O
TM
OSD
SYSCON/SERVO
NICAM
SECAM
DISPLAY/KEY-MATRIX

Component Side

5-1-3 SW7T21 (TEST) location for adjustment mode setting

(SLV-SE620D/SE620E/SE620B/SE620N/SE720D/SX720D/SE720E/SX720E/SE720G/SE720I/SE720B/SX727D/SE727E/SE720N/SX720N/SE820D/SE820E/SE820G/SE820B/SE820N)


JK7T01
V-IN
L-IN
R-IN
SW7T21
C7T01
C7T02
TEST
1

TEST (SW7T21) BUTTON

Fig. 5-3 Function PCB (Top View)

5-2 Mechanical Adjustment

Note : Refer to the Mechanical Manual for the adjustment and confirmation of Ass'y deck.

5-2-1 The number and position of test point

Test point : TP602 (H'D S/W -Trigger)
TP301 (Envelope)
TP302 (Audio output)

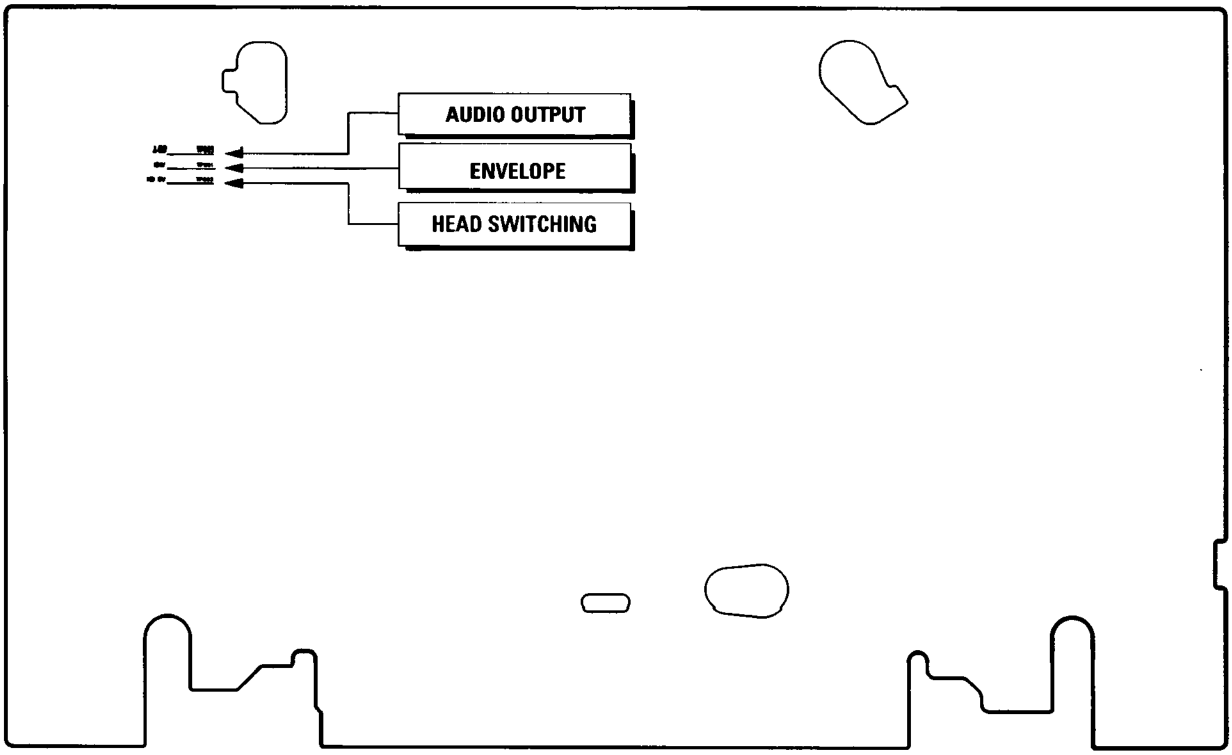


Fig. 5-4 Location of Test point (Main PCB-Top View)

5-2-2 ACE Head Position (X-Point) Adjustment

(See the 5-2-1(d) ACE Head Position (X-Point) Adjustment on page 5-2 of the Mechanical Manual)

1) Playback the alignment tape (Color bar).
2) Press the "TEST" button on Main PCB/Function PCB to set the adjustment mode. (See Fig. 5-2 and 5-3)
3) Press the "5" button of remote control then adjustment is operated automatically. (See Fig. 5-1)
4) Connect the CH-1 probe to TP301 (Envelope) the CH-2 probe to TP602 (H'D switching pulse) and hen trigger to CH-1.
5) Insert the (-) driver into the X-Point adjustment hole and adjust it so that envelope waveform is maximum.
6) Turn the Power off.

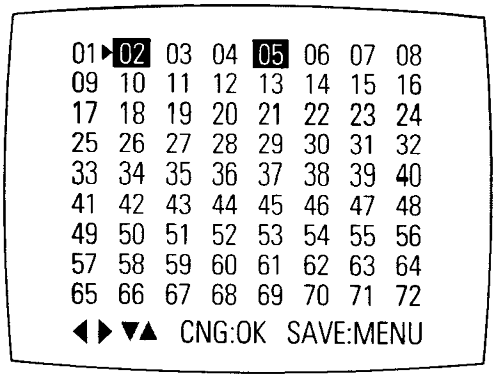
5-3 Head Switching Point Adjustment

1) Playback the alignment tape.
2) Press the "TEST" button on Main PCB/Function PCB to set the adjustment mode. (See Fig. 5-2 and 5-3)
3) Press the "SP/LP" button of remote control then adjustment is operated automatically. (See Fig. 5-1)
4) Turn the Power off.

5-4 NVRAM Option Setting

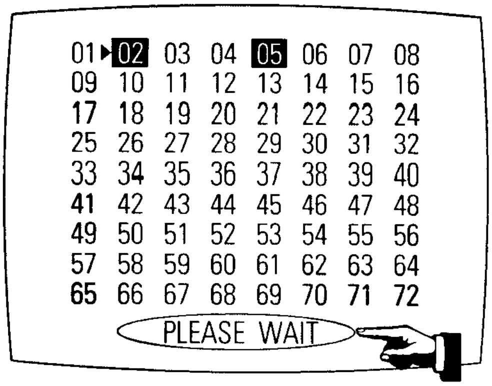
1) NVRAM Option is adjusted at production line basically.
2) In case Micom (IC601) and NVRAM (IC605 ; EEPROM) is replaced, be sure to set the corresponding option number of the reqaired model. (If the option is not set, the unit is not operated.)

1) Press the "TEST" button on Main PCB/Function PCB to set the adjustment mode. (See Fig. 5-2 and 5-3)
2) Press the "MENU" button on the remote control about 5 seconds then option setting display is appeared. (See Fig. 5-5 and 5-6)
3) Select the option number (See Table 5-1) of corresponding model with "FF/REW/STOP/PAUSE" button on the remote control.
4) If selecting the option number is completed, press the "OK (PLAY)" button of remote control. (If "OK (PLAY)" button is pressed, the selected number is changes reversed color. ; See Fig. 5-5)
5) Press the "MENU" button of remote control again to store the option number. ("PLEASE WAIT" is displayed for a second as shown Fig. 5-6 and this setting is completed.)
6) Turn the Power off.



```
01▶02 03 04 05 06 07 08
09 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24
25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56
57 58 59 60 61 62 63 64
65 66 67 68 69 70 71 72
◀▶▼▲ CNG:OK SAVE:MENU
```

Fig. 5-5



```
01▶02 03 04 05 06 07 08
09 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24
25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56
57 58 59 60 61 62 63 64
65 66 67 68 69 70 71 72
PLEASE WAIT
```

Fig. 5-6

<Table 5-1>

MODELS	OPTION NUMBER
SLV-SE220D	2, 4, 5, 11, 13, 14, 34, 35, 38, 40, 42, 45, 47, 49, 60, 61, 63, 69, 72
SLV-SE220I	3, 4, 5, 10, 11, 13, 14, 25, 26, 33, 34, 35, 38, 40, 43, 45, 47, 49, 60, 61, 63, 69, 72
SLV-SE220G	3, 4, 5, 10, 11, 13, 14, 27, 33, 34, 35, 38, 40, 41, 45, 47, 49, 60, 61, 63, 69, 72
SLV-SE220B	2, 4, 5, 11, 13, 14, 20, 21, 26, 33, 34, 35, 36, 38, 40, 45, 47, 49, 60, 61, 63, 69, 72
SLV-SE420K	9, 10, 11, 13, 14, 20, 36, 38, 42, 45, 47, 49, 54, 60, 61, 63, 69, 72
SLV-SE620D	6, 7, 9, 10, 12, 13, 34, 35, 38, 42, 45, 47, 49, 51, 60, 61, 63, 69, 72
SLV-SE620D	6, 7, 8, 9, 10, 11, 12, 13, 14, 34, 35, 38, 42, 45, 47, 49, 51, 60, 61, 63, 69, 72
SLV-SE620B	6, 7, 8, 9, 10, 11, 12, 13, 14, 20, 21, 26, 33, 34, 35, 36, 38 45, 47, 49, 51, 60, 61, 63 69, 72
SLV-SE620N	6, 7, 8, 9, 10, 12, 13, 20, 36, 38, 42, 45, 47, 49, 51, 54, 60, 61, 63, 69, 72
SLV-SE720D/SX720D	2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 19, 34, 35, 40, 42, 45, 47, 51, 60, 61, 63, 66, 69, 72
SLV-SE720E/SX720E	2, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 19, 34, 35, 40, 42, 45, 47, 51, 60, 61, 63, 66, 69, 72
SLV-SE720G	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 19, 27, 33, 34, 35, 40, 41, 45, 47, 51, 60, 61, 63, 66, 69, 72
SLV-SE720I	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 19, 25, 26, 33, 34, 35, 40, 43, 45, 47, 51, 60, 61, 63, 66, 69, 72
SLV-SE720B	2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 19, 20, 21, 26, 33, 34, 35, 36, 40, 45, 47, 51, 60, 61, 63, 66, 69, 72
SLV-SX727D	2, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 19, 32, 34, 35, 40, 42, 45, 47, 51, 60, 61, 63, 66, 69, 72
SLV-SE727E	2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 19, 32, 34, 35, 40, 42, 45, 47, 51, 60, 61, 63, 66, 69, 72
SLV-SE720N/SX720N	2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 19, 20, 36, 42, 45, 47, 51, 54, 60, 61, 63, 66, 69, 72
SLV-SE820D	2, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 19, 23, 29, 32, 34, 35, 40, 42, 45, 47, 48, 49, 50, 60, 61, 63, 64, 66, 69, 72
SLV-SE820E	2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 19, 23, 29, 32, 34, 35, 40, 42, 45, 47, 48, 49, 50, 60, 61, 63, 64, 66, 69, 72
SLV-SE820G	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 19, 23, 27, 29, 32, 33, 34, 35, 40, 41, 45, 47, 48, 49, 50, 60, 61, 63, 64, 66, 69, 72
SLV-SE820B	2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 19, 20, 21, 23, 26, 29, 32, 33, 34, 35, 36, 40, 45, 47, 48, 49, 50, 60, 61, 63, 64, 66, 69, 72
SLV-SE820N	2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 19, 20, 23, 29, 32, 36, 42, 45, 47, 48, 49, 50, 54, 60, 61, 63, 64, 66, 69, 72

6. Repair Parts List

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6-1-2 Instrument Assembly (Hi-Fi Models) -- 6-3

6-1-3 Mechanical Parts (Top Side) -- 6-4

6-1-4 Mechanical Parts (Bottom Side) -- 6-5

6-2 Electrical Parts List -- 6-6

6-1 Exploded Views

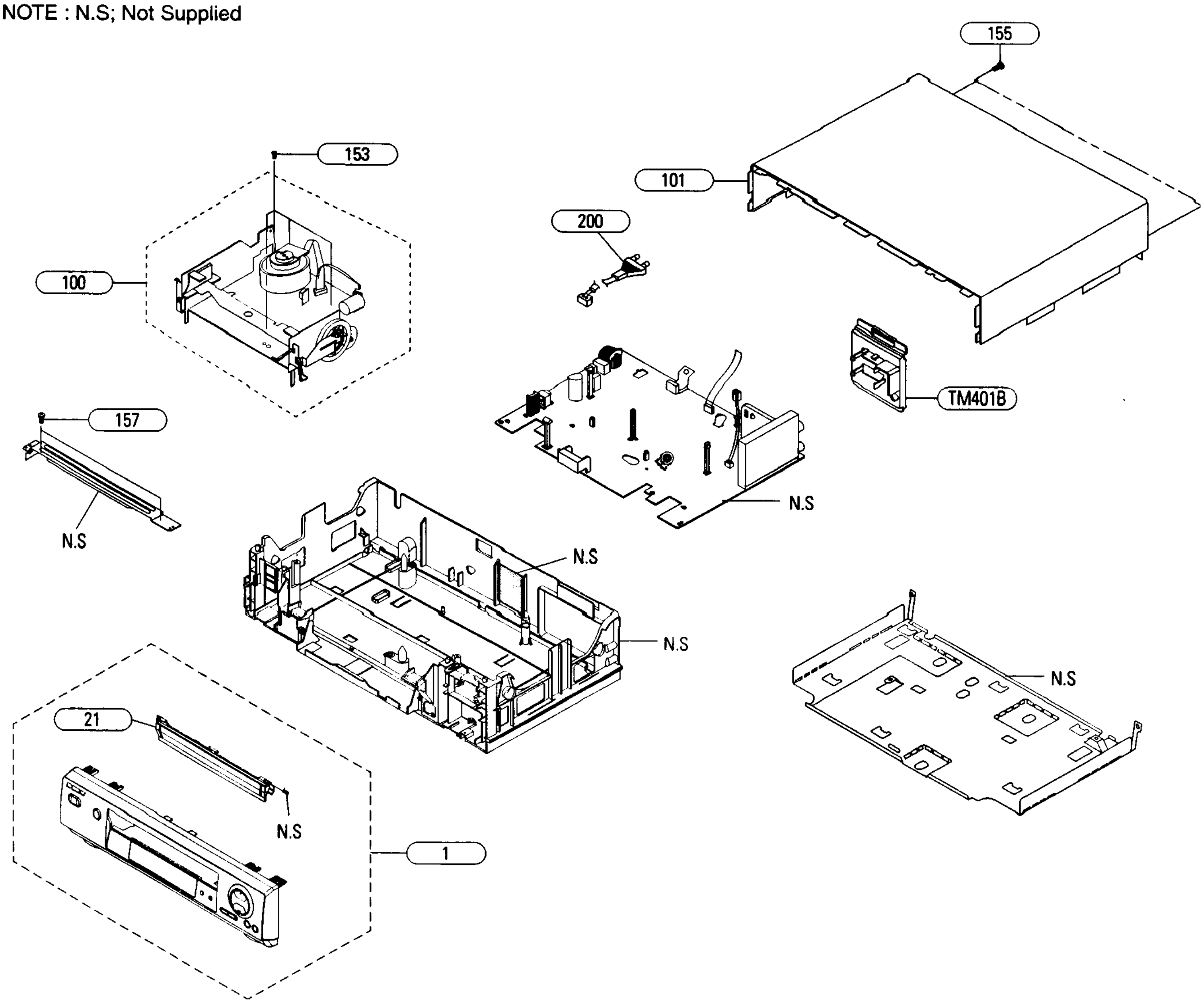
NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

6-1-1 Instrument Assembly (Mono Models)(SE220/SE420)

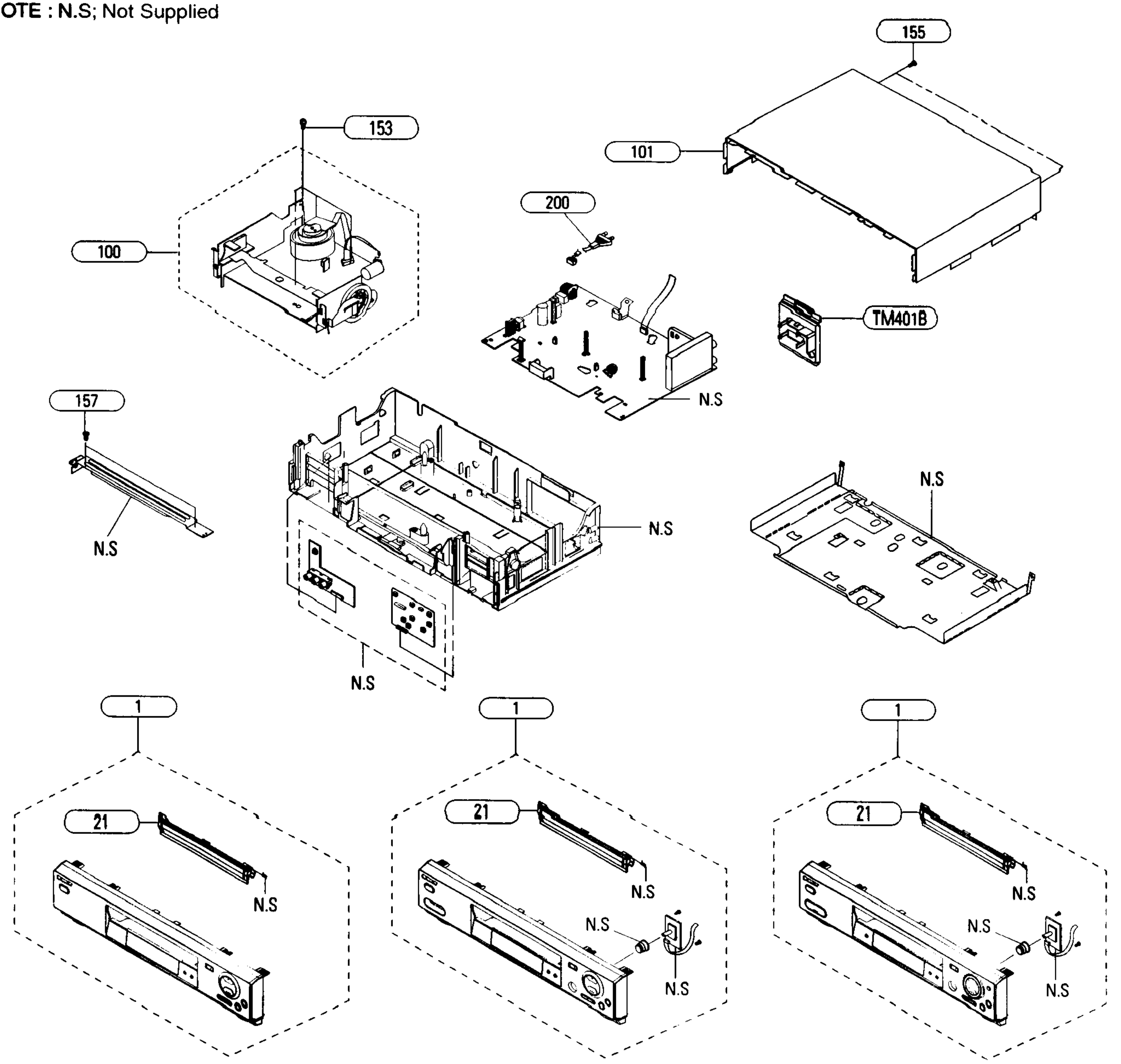
NOTE : N.S; Not Supplied



Ref. No.	Part No.	Description	Remarks
1	3-075-060-01	ASSY PANEL FRONT (SE420)	
1	3-075-061-01	ASSY PANEL FRONT (SE220:G,I)	
1	3-075-062-01	ASSY PANEL FRONT (SE220:B)	
1	3-075-063-01	ASSY PANEL FRONT (SE220:D)	
21	3-075-705-01	DOOR-CASSETTE (SE220/SE420)	
100	3-709-670-01	ASSY-DECK	
101	3-075-020-01	CABINET-TOP (SE220/SE420)	
153	7-685-661-11	SCREW-BH	
155	7-685-646-11	SCREW-TAPTITE	
157	7-685-548-19	SCREW-TAPTITE	
⚠200	1-823-023-11	POWER CORD (SE220:B,D/SE420)	
⚠200	1-823-025-11	POWER CORD (SE220:G,I)	
TM401B	1-693-553-11	TM BLOCK (SE220:B)	
TM401B	1-693-584-11	TM BLOCK (SE220:D)	
TM401B	1-693-585-11	TM BLOCK (SE220:G)	
TM401B	1-693-589-11	TM BLOCK (SE220:I/SE420)	

6-1-2 Instrument Assembly (Hi-Fi Models)

NOTE : N.S; Not Supplied



SLV-SE620D/SE620E/SE620B/SE620N

SLV-SE720D/SX720D/SE720E/SX720E/SE720G/SE720I/ SE720B/SE727D/SE727E/SE720N/SX720N

SLV-SE820D/SE820E/SE820G/SE820B/SE820N

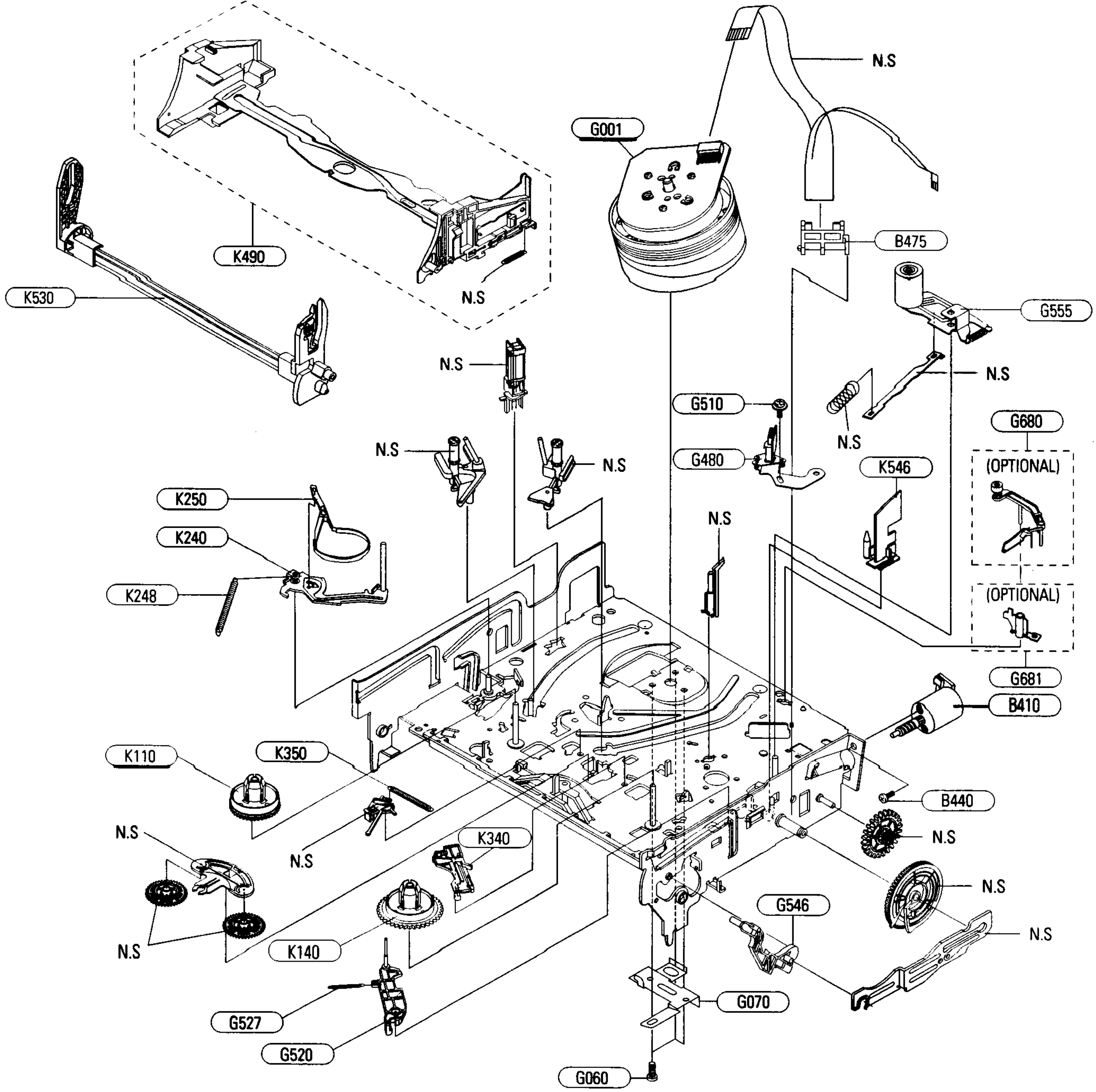
Ref. No.	Part No.	Description	Remarks
1	3-075-049-01	ASSY-PANEL FRONT (SE820:G)	
1	3-075-050-01	ASSY-PANEL FRONT (SE820:B)	
1	3-075-051-01	ASSY-PANEL FRONT (SE820:D,E,N)	
1	3-075-052-01	ASSY-PANEL FRONT (SE720:G,I,B)	
1	3-075-054-01	ASSY-PANEL FRONT (SE720:D,E,N)	
1	3-075-055-01	ASSY-PANEL FRONT (SE727)	
1	3-075-056-01	ASSY-PANEL FRONT (SX727)	
1	3-075-057-01	ASSY-PANEL FRONT (SX720)	
1	3-075-058-01	ASSY-PANEL FRONT (SE620:B)	
1	3-075-059-01	ASSY-PANEL FRONT (SE620:D,E,N)	
21	3-075-918-01	DOOR-CASSETTE (SE620/SE720:B,D,E,N/SE727/SE820/SX720/SX727)	
21	3-075-919-01	DOOR-CASSETTE (SE720:G,I)	

Ref. No.	Part No.	Description	Remarks
100	3-709-670-01	ASSY-DECK	
101	3-075-019-01	CABINET-TOP (SE620/SE720/SE727/SE820)	
101	3-075-019-11	CABINET-TOP (SX720/SX727)	
153	7-685-661-11	SCREW-BH	
155	7-685-646-11	SCREW-TAPTITE	
157	7-685-548-19	SCREW-TAPTITE	
⚠200	1-823-023-11	POWER CORD (SE620/SE720:B,D,E,N/SE727/SE820:B,D,E,N/SX720/SX727)	
⚠200	1-823-025-11	POWER CORD (SE720:G,I/SE820:G)	
TM401B	1-693-553-11	TM BLOCK (SE620:B/SE720:B/SE820:B)	
TM401B	1-693-585-11	TM BLOCK (SE720:G/SE820:G)	
TM401B	1-693-589-11	TM BLOCK (SE620:D,E,N/SE720:D,E,I,N/SE727/SE820:D,E,N/SX720/SX727)	

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

6-1-3 Mechanical Parts (Top Side)

NOTE : N.S; Not Supplied



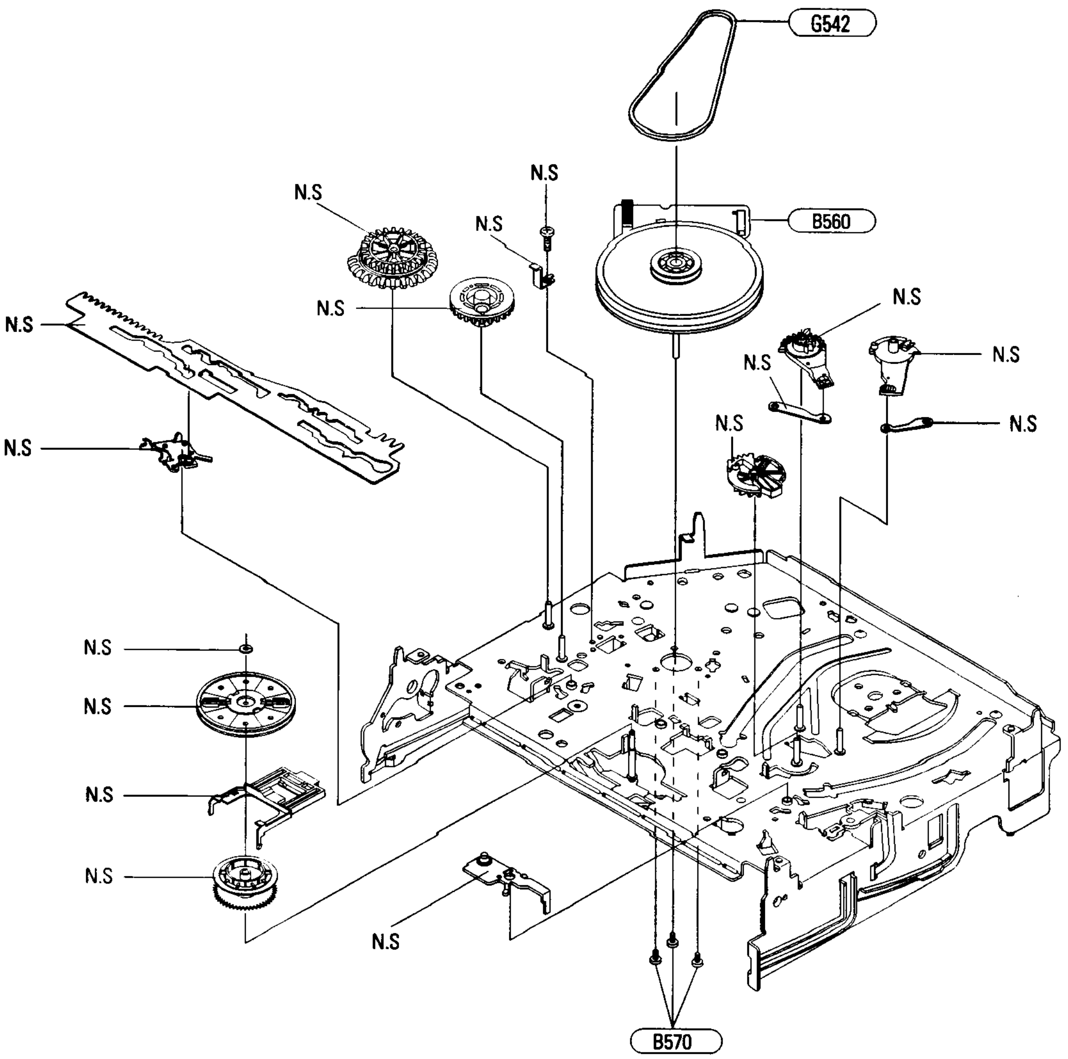
N.S
G001
K490
N.S
K530
B475
G555
N.S
N.S
G510
G680
N.S
(OPTIONAL)
N.S
G480
K546
N.S
K250
K240
K248
(OPTIONAL)
G681
B410
K110
K350
B440
N.S
N.S
K340
N.S
N.S
N.S
G546
N.S
N.S
K140
G070
G527
G520
G060

Ref. No.	Part No.	Description	Remarks
B410	1-796-434-11	MOTOR-LOADING ASSY	
B440	7-682-144-01	SCREW, MACHINE	
B475	1-796-433-11	DAMPER-CAPSTAN	
G001	1-804-707-11	ASSY CYLINDER (SE220:B,D)	
G001	1-804-708-11	ASSY CYLINDER (SE220:G,I)	
G001	1-804-709-11	ASSY CYLINDER (SE420)	
G001	1-804-710-11	ASSY CYLINDER (SE620:D,E,N/SE720:D,E,G,I/SE727/SE820:D,E,G,N/SX720/SX727)	
G001	1-804-711-11	ASSY CYLINDER (SE620:B/SE720:B/SE820:B)	
G060	7-682-647-01	SCREW-ASS'Y MACH (+M3X6)	
G070	3-067-796-01	PLATE-GROUND DECK	
G480	3-709-671-01	ASSY-HEAD ACE	
G510	7-621-759-35	SCREW-ASS'Y TAPT	
G520	3-067-779-01	LEVER-#9 GUIDE ASS'Y	
G527	3-067-780-01	SPRING ETC-GUIDE 9	

Ref. No.	Part No.	Description	Remarks
G546	3-075-704-01	LEVER-FL DOOR	
G555	3-067-784-01	LEVER-UNIT PINCH ASSY	
G680	3-075-021-01	LEVER-HEAD CLEANER ASS'Y (EXCEPT SE220/SE420)	
G681	3-075-022-01	SLEEVE-HEAD CLEANER (EXCEPT SE220/SE420)	
K110	3-075-046-01	REEL-DISK S	
K140	3-075-047-01	REEL-DISK T	
K240	3-067-781-01	LEVER-TENSION ASS'Y	
K248	3-067-782-01	SPRING ETC-TENSION LEVER	
K250	3-067-783-01	BAND-BRAKE ASS'Y	
K340	3-067-785-01	LEVER-T. BRAKE ASS'Y	
K350	3-067-786-01	SPRING ETC-BRAKE	
K490	3-067-788-01	HOLDER-FL CASS.	
K546	3-067-789-01	GUIDE-CASS. DOOR	

6-1-4 Mechanical Parts (Bottom Side)

NOTE : N.S; Not Supplied


G542
N.S
B560
N.S
N.S
N.S
N.S
N.S
N.S
N.S
N.S
N.S
N.S
N.S
N.S
N.S
N.S
N.S
B570

Ref. No.	Part No.	Description	Remarks
B560	1-796-432-11	MOTOR-CAPSTAN	
B570	7-685-133-11	SCREW-CAPSTAN	
G542	3-067-790-01	BELT-PULLEY	

MAIN

6-2 Electrical Parts List

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: μF
- COILS
  uH: μH
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA... , uPA... , μPA... ,
  uPB... , μPB... , uPC... , μPC... ,
  uPD..., μPD...

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remarks
		< FERRITE BEAD >			
BD1SD1	1-400-085-11	INDUCTOR			
BD1SR1	1-400-086-11	CORE-FERRITE BEAD			
BD1SS1	1-400-085-11	INDUCTOR			
BD1SS2	1-400-085-11	INDUCTOR			
		< CAPACITOR >			
C1P102	1-126-437-11	C-AL	47uF	20%	25V
C1P103	1-126-458-61	C-AL	1uF	20%	50V
C1P105	1-126-437-11	C-AL	47uF	20%	25V
C1P106	1-126-437-11	C-AL	47uF	20%	25V
C1P109	1-126-458-61	C-AL	1uF	20%	50V
					(EXCEPT SE220/SE420K)
C1P120	1-126-437-11	C-AL	47uF	20%	25V
C1SD03	1-165-557-11	C-CERAMIC	2.2nF	20%	400V
C1SD04	1-165-557-11	C-CERAMIC	2.2nF	20%	400V
C1SD11	1-165-577-11	C-AL	47uF	20%	400V
C1SD12	1-165-574-11	C-FILM, MPEF	10nF	10%	630V
C1SD13	1-165-567-11	C-FILM, PEF	1.2nF	10%	50V
C1SR14	1-165-571-11	C-FILM, PEF	4.7nF	5%	50V
C1SS01	1-165-573-11	C-FILM, MPEF	100nF	20%	275V
C1SS02	1-165-573-11	C-FILM, MPEF	100nF	20%	275V
C1SS03	1-165-557-11	C-CERAMIC	2.2nF	20%	400V
					(SE220/SE420K)
C1SS32	1-126-970-11	C-AL	330UF	20%	50V
C1SS33	1-126-940-11	C-AL	330UF	20%	25V
C1SS34	1-126-940-11	C-AL	330UF	20%	25V
C1SS35	1-126-926-11	C-AL	1000UF	20%	10V
C1SS36	1-126-926-11	C-AL	1000uF	20%	10V
C1SS39	1-136-497-11	C-FILM, PEF	100nF	5%	50V
C1SS41	1-126-925-11	C-AL	470uF	20%	10V
					(SE720/SE727E/SX720/SX727D/SE820)
C317	1-126-458-61	C-AL	1uF	20%	50V
C318	1-126-458-61	C-AL	1uF	20%	50V
C321	1-161-494-11	C-CERAMIC	22nF	+80-20%	25V
C322	1-126-458-61	C-AL	1uF	20%	50V
C325	1-126-437-11	C-AL	47uF	20%	25V
C326	1-126-458-61	C-AL	1uF	20%	50V
C331	1-216-295-11	R-CHIP	0	5%	1/10W
					(SE220D,G,I/SE620D,E/SE720D,E,G,I/SX720D,E/ SX727D/SE727E/SE820D,E,G)
C333	1-126-109-11	C-AL	10uF	20%	16V
C338	1-161-494-11	C-CERAMIC	22nF	+80-20%	25V
C339	1-126-109-11	C-AL	10uF	20%	16V
C341	1-126-437-11	C-AL	47uF	20%	25V
C343	1-165-319-11	C-CERAMIC, CHIP	1000nF	+80-20%	16V
C347	1-165-319-11	C-CERAMIC, CHIP	1000nF	+80-20%	16V
C349	1-165-319-11	C-CERAMIC, CHIP	1000nF	+80-20%	16V
C351	1-126-437-11	C-AL	47uF	20%	25V
C352	1-126-458-61	C-AL	1uF	20%	50V
C353	1-126-458-61	C-AL	1uF	20%	50V
C354	1-126-437-11	C-AL	47uF	20%	25V
C356	1-163-251-11	C-CERAMIC, CHIP	0.1nF	5%	50V
					(SE820)
C380	1-161-494-11	C-CERAMIC	22nF	+80-20%	25V
C384	1-115-339-11	C-CERAMIC, CHIP	100nF	+80-20%	50V
					(SE720/SE727E/SX720/SX727D/SE820)
C3A02	1-126-435-71	C-AL	22uF	20%	16V
					(SE720/SE727E/SX720/SX727D/SE820)
C3A12	1-126-437-11	C-AL	47uF	20%	25V
C3A14	1-163-267-11	C-CERAMIC, CHIP	0.47nF	5%	50V
C3A17	1-126-109-11	C-AL	10uF	20%	16V
C3A30	1-126-437-11	C-AL	47uF	20%	25V
C3A40	1-126-109-11	C-AL	10uF	20%	16
C3A41	1-126-458-61	C-AL	1uF	20%	50V
C3D04	1-163-267-11	C-CERAMIC, CHIP	0.47nF	5%	50V
					(SE820)
C3S02	1-126-458-61	C-AL	1uF	20%	50V
					(SE220B/SE620B/SE720B/SE820B)
C3S04	1-126-458-61	C-AL	1uF	20%	50V
					(SE220B/SE620B/SE720B/SE820B)
C3S06	1-126-456-61	C-AL	470nF	20%	50V
					(SE220B/SE620B/SE720B/SE820B)
C3S09	1-126-456-61	C-AL	470nF	20%	50V
					(SE220B/SE620B/SE720B/SE820B)
C3S10	1-126-437-11	C-AL	47uF	20%	25V
					(SE220B/SE620B/SE720B/SE820B)
C401	1-126-925-11	C-AL	470uF	20%	10V
C402	1-163-033-11	C-CERAMIC, CHIP	22nF	10%	50V
C403	1-104-660-11	C-AL	47uF	20%	16V
					(SE720/SE727E/SX720/SX727D/SE820)
C407	1-104-660-11	C-AL	47uF	20%	16V
					(SE720/SE727E/SX720/SX727D/SE820D,E,G,N)

Ref. No.	Part No.	Description	Remarks
C4N02	1-126-109-11	C-AL 10uF 20% 16V	(EXCEPT SE220/SE420K)
C4N07	1-163-267-11	C-CERAMIC, CHIP 0.47nF 5% 50V	(EXCEPT SE220/SE420K)
C4N09	1-126-109-11	C-AL 10uF 20% 16V	(EXCEPT SE220/SE420K)
C4N10	1-126-109-11	C-AL 10uF 20% 16V	(EXCEPT SE220/SE420K)
C4N11	1-126-461-61	C-AL 3.3UF 20% 50V	(EXCEPT SE220/SE420K)
C4N14	1-126-109-11	C-AL 10uF 20% 16V	(EXCEPT SE220/SE420K)
C4N16	1-104-660-11	C-AL 47uF 20% 16V	(SE720/SE727E/SX720/SX727D/SE820)
C4N17	1-163-267-11	C-CERAMIC, CHIP 0.47nF 5% 50V	(EXCEPT SE220/SE420K)
C4N18	1-163-267-11	C-CERAMIC, CHIP 0.47nF 5% 50V	(EXCEPT SE220/SE420K)
C4N23	1-126-458-61	C-AL 1uF 20% 50V	(EXCEPT SE220/SE420K)
C4N24	1-126-458-61	C-AL 1uF 20% 50V	(EXCEPT SE220/SE420K)
C501	1-126-109-11	C-AL 10uF 20% 16V	(EXCEPT SE220/SE420K)
C503	1-126-435-71	C-AL 22uF 20% 16V	(SE720/SE727E/SX720/SX727D/SE820)
C504	1-126-109-11	C-AL 10uF 20% 16V	(EXCEPT SE220/SE420K)
C507	1-126-435-71	C-AL 22uF 20% 16V	(SE720/SE727E/SX720/SX727D/SE820)
C508	1-163-017-11	C-CERAMIC, CHIP 4.7nF 10% 50V	(EXCEPT SE220/SE420K)
C510	1-126-437-11	C-AL 47uF 20% 25V	(EXCEPT SE220/SE420K)
C517	1-163-017-11	C-CERAMIC, CHIP 4.7nF 10% 50V	(EXCEPT SE220/SE420K)
C518	1-126-435-71	C-AL 22uF 20% 16V	(SE720/SE727E/SX720/SX727D/SE820)
C521	1-126-109-11	C-AL 10uF 20% 16V	(EXCEPT SE220/SE420K)
C541	1-126-458-61	C-AL 1uF 20% 50V	(EXCEPT SE220/SE420K)
C601	1-126-437-11	C-AL 47uF 20% 25V	
C602	1-163-033-11	C-CERAMIC, CHIP 22nF 10% 50V	
C609	1-163-033-11	C-CERAMIC, CHIP 22nF 10% 50V	
C618	1-126-968-11	C-AL 100uF 20% 50V	
C624	1-161-283-51	C-CERAMIC, CHIP 0.022nF 5% 50V	(SE420K/SE620/SE720N/SX720N/SE820N)
C625	1-161-283-51	C-CERAMIC, CHIP 0.022nF 5% 50V	(SE420K/SE620/SE720N/SX720N/SE820N)
C626	1-161-283-51	C-CERAMIC, CHIP 0.022nF 5% 50V	
C627	1-161-283-51	C-CERAMIC, CHIP 0.022nF 5% 50V	
C637	1-163-267-11	C-CERAMIC, CHIP 0.47nF 5% 50V	
C639	1-163-251-11	C-CERAMIC, CHIP 0.1nF 5% 50V	
C640	1-126-437-11	C-AL 47uF 20% 25V	
C645	1-163-121-11	C-CERAMIC, CHIP 0.15nF 5% 50V	(SE720/SE727E/SX720/SX727D/SE820)
C651	1-163-033-11	C-CERAMIC, CHIP 22nF 10% 50V	
C655	1-163-121-11	C-CERAMIC, CHIP 0.15nF 5% 50V	(SE220/SE420K/SE620)
C679	1-163-033-11	C-CERAMIC, CHIP 22nF 10% 50V	(SE220/SE420K/SE620)
C680	1-126-926-11	C-AL 1000uF 20% 10V	
C692	1-126-437-11	C-AL 47uF 20% 25V	
C693	1-126-926-11	C-AL 1000uF 20% 10V	(SE720/SE727E/SX720/SX727D/SE820)
C695	1-163-121-11	C-CERAMIC, CHIP 0.15nF 5% 50V	
C697	1-163-033-11	C-CERAMIC CHIP 22nF 10% 50V	
C6P06	1-163-275-11	C-CERAMIC, CHIP 1nF 10% 50V	(SE220/SE720/SE727E/SX720/SX727D/SE820)
C6P10	1-126-458-61	C-AL 1uF 20% 50V	
C6P11	1-126-458-61	C-AL 1uF 20% 50V	
C6P12	1-104-660-11	C-AL 47uF 20% 16V	(SE720/SE727E/SX720/SX727D/SE820)
C701	1-126-925-11	C-AL 470uF 20% 10V	
C703	1-163-275-11	C-CERAMIC, CHIP 1nF 10% 50V	
C7T01	1-161-323-11	C-CERAMIC 1nF 10% 50V	(SE820)
C7T02	1-161-323-11	C-CERAMIC 1nF 10% 50V	(SE820)
C806	1-163-251-11	C-CERAMIC, CHIP 0.1nF 5% 50V	
C822	1-163-251-11	C-CERAMIC, CHIP 0.1nF 5% 50V	
C826	1-163-251-11	C-CERAMIC, CHIP 0.1nF 5% 50V	(EXCEPT SE620D,N)
C841	1-163-251-11	C-CERAMIC, CHIP 0.1nF 5% 50V	(EXCEPT SE620D,N)
CT02	1-115-339-11	C-CERAMIC, CHIP 100nF +80-20% 50V	(SX727D/SE727E/SE820)
CT04	1-115-339-11	C-CERAMIC, CHIP 100nF +80-20% 50V	(SE220/SE420K/SE620/SE720/SE727E/SX720/SX727D)
		< CONNECTOR >	
CN701	1-816-509-11	CONNECTOR-HEADER 3WALL 12P	(EXCEPT SE220/SE420K)
		< DIODE >	
D1P101	1-804-407-11	DIODE-SWITCHING1N4148	
D1P102	1-804-407-11	DIODE-SWITCHING1N4148	(EXCEPT SE220/SE420K)
D1P103	1-804-407-11	DIODE-SWITCHING1N4148	(EXCEPT SE220/SE420K)
D1SD11	1-804-412-11	DIODE-RECTIFIER F1T4	
D1SD31	1-804-412-11	DIODE-RECTIFIER F1T4	
D1SR11	1-804-407-11	DIODE-SWITCHING1N4148	
D1SS01	1-804-413-11	DIODE-RECTIFIER 1T5	
D1SS02	1-804-413-11	DIODE-RECTIFIER 1T5	
D1SS03	1-804-413-11	DIODE-RECTIFIER 1T5	
D1SS04	1-804-413-11	DIODE-RECTIFIER 1T5	
D1SS11	1-804-408-11	DIODE-RECTIFIER UF4007	
D1SS31	1-804-412-11	DIODE-RECTIFIER F1T4	
D1SS32	1-804-411-11	DIODE-RECTIFIER UG2D	
D1SS33	1-804-782-11	DIODE-SCHOTTKY SG45	
D1SS40	1-804-412-11	DIODE-RECTIFIER F1T4	(SE720/SE727E/SX720/SX727D/SE820)

MAIN

Ref. No.	Part No.	Description	Remarks
D1SS41	1-804-412-11	DIODE-RECTIFIER F1T4	(SE720/SE727E/SX720/SX727D/SE820)
D301	1-804-407-11	DIODE-SWITCHING1N4148	
D4N01	1-804-407-11	DIODE-SWITCHING1N4148	(EXCEPT SE220/SE420K)
D4N02	1-804-407-11	DIODE-SWITCHING1N4148	(EXCEPT SE220/SE420K)
D603	1-804-407-11	DIODE-SWITCHING1N4148	
D6E01	1-804-407-11	DIODE-SWITCHING1N4148	(SE720/SE727E/SX720/SX727D/SE820)
D701	1-804-407-11	DIODE-SWITCHING1N4148	
D702	1-804-407-11	DIODE-SWITCHING1N4148	
D703	1-804-407-11	DIODE-SWITCHING1N4148	
D704	1-804-407-11	DIODE-SWITCHING1N4148	
D805	1-804-407-11	DIODE-SWITCHING1N4148	
		< TIMER >	
DL701	1-786-352-11	DIAL-TIMER (SE820)	
		< DISPLAY >	
DT701	1-804-699-11	LED DISPLAY LTG-0129M	(SE220/SE420K/SE620)
DT701	1-518-816-11	VFD DISPLAY	(SE720/SE727E/SX720/SX727D/SE820)
		< FUSE >	
⚠F1SS01	1-576-526-11	FUSE-CARTRIDGE 250V 1.6A	
FC1SS1	1-576-527-11	FUSE-CLIP	
FC1SS2	1-576-527-11	FUSE-CLIP	
		< IC >	
IC1SS1	1-804-784-11	PHOTO-COUPLER	
IC1SS2	1-804-445-11	IC KA431Z	
IC301	1-804-702-11	IC-VIDEO PROCESS LA71750M	
IC3S01	1-804-701-11	IC-CHROMA LA70100M	(SE220B/SE620B/SE720B/SE820B)
IC4N01	1-804-795-11	IC-AUDIO PROCESSOR MSP3417D(PQFP)	(SE620B,E,N/SE720E,G,I,B,N/SX720N,E/SE727E/SE820B,E,G,N)
IC501	1-804-703-11	IC-AUDIO PROCESSOR LA72646M	(EXCEPT SE220/SE420K)
IC601	1-804-696-11	IC MICOM N120-A69-3BA	(SE220/SE620B,D,E/SE720D,E,G,I,B/SX720D,E/ SX727D/SE727E/SE820B,D,E,G)
IC601	1-804-697-11	IC MICOM N120-A70-3BA	(SE420K/SE620N/SE720N/SX720N/SE820N)
IC604	1-804-444-11	IC KA7533	
IC605	1-804-432-11	IC-EEPROM 524C80D81	
IC608	1-804-480-11	IC-VOL. DETECTOR 7042	(SE420K/SE620N/SE720N/SX720N/SE820N)
IC6P01	1-804-454-11	IC-OSD PROCESSOR LC74759JM-9820	(SE420K/SE620)
IC6P01	1-804-453-11	IC-OSD PROCESSOR LC74776NM-9821	(SE220/SE720/SE727E/SX720/SX727D/SE820)
IC701	1-804-698-11	IC MICOM UPD780232GC	(SE720/SE727E/SX720/SX727D/SE820)
IC701	1-804-706-11	IC-LED DRIVER PT6959 (SE220/SE420K/SE620)	

Ref. No.	Part No.	Description	Remarks
IC801	1-804-700-11	IC-FP BU4053BCF (SE220/SE420K)	
		< JUMPER >	
J301	1-216-295-11	R-CHIP 0 5% 1/10W	(EXCEPT SE220/SE420K)
J812	1-216-295-11	R-CHIP 0 5% 1/10W	(SE220/SE420K)
J813	1-216-295-11	R-CHIP 0 5% 1/10W	(SE220/SE420K)
J814	1-216-295-11	R-CHIP 0 5% 1/10W	(SE220/SE420K)
J815	1-216-295-11	R-CHIP 0 5% 1/10W	(SE720/SE727E/SX720/SX727D/SE820)
J816	1-216-295-11	R-CHIP 0 5% 1/10W	(SE720/SE727E/SX720/SX727D/SE820)
		< LINE FILTER >	
L1SS02	1-424-830-11	FILTER LINE NOISE30mH	
		< COIL >	
L1SS31	1-424-828-11	COIL-CHOKE 10UH	
L1SS32	1-424-828-11	COIL-CHOKE 10UH	
L4N04	1-400-085-11	INDUCTOR (EXCEPT SE220/SE420K)	
L502	1-400-086-11	CORE-FERRITE BEAD	
L814	1-400-085-11	INDUCTOR	
		< LED >	
LD601	1-804-438-11	LED-IR	
		< TRANS >	
PT1SS1	1-437-395-11	TRANS SWITCHING EE2621	(SE220/SE420K/SE620)
PT1SS1	1-437-758-11	TRANS SWITCHING EE2621	(SE720/SE727E/SX720/SX727D/SE820)
		< TRANSISTOR >	
Q1P101	1-804-424-11	TR-SMALL SIGNAL KSC2328A-Y	
Q1P102	1-804-424-11	TR-SMALL SIGNAL KSC2328A-Y	
Q1P103	1-804-424-11	TR-SMALL SIGNAL KSC2328A-Y	(EXCEPT SE220/SE420K)
Q1P104	1-804-423-11	TR-SMALL SIGNAL KSA928A-Y	
Q1P105	1-804-427-11	TR-DIGITAL KSR1001	
Q1P106	1-804-421-11	TR-SMALL SIGNAL KSC945	(EXCEPT SE220/SE420K)
Q1P107	1-804-429-11	TR-DIGITAL KSR2001	(EXCEPT SE220/SE420K)
Q1P108	1-804-424-11	TR-SMALL SIGNAL KSC2328A-Y	(EXCEPT SE220/SE420K)
Q1SR01	1-804-783-11	TR-POWER	
Q1SR02	1-804-422-11	TR-SMALL SIGNAL KTC3203-Y	
Q302	1-804-421-11	TR-SMALL SIGNAL KSC945	(SE220B/SE620B/SE720B/SE820B)
Q350	1-804-420-11	TR-SMALL SIGNAL KSA733	
Q351	1-804-420-11	TR-SMALL SIGNAL KSA733 (EXCEPT SE620D,N)	
Q3A01	1-804-421-11	TR-SMALL SIGNAL KSC945	
Q3A02	1-804-420-11	TR-SMALL SIGNAL KSA733	

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remarks
Q3A03	1-804-422-11	TR-SMALL SIGNAL KTC3203-Y			
Q3A04	1-804-422-11	TR-SMALL SIGNAL KTC3203-Y			
Q3A05	1-804-422-11	TR-SMALL SIGNAL KTC3203-Y			
Q3A06	1-804-420-11	TR-SMALL SIGNAL KSA733			
Q3D01	1-804-422-11	TR-SMALL SIGNAL KTC3203-Y (SE820)			
Q3D02	1-804-420-11	TR-SMALL SIGNAL KSA733 (SE820)			
Q603	1-804-421-11	TR-SMALL SIGNAL KSC945 (SE820)			
Q6E01	1-804-422-11	TR-SMALL SIGNAL KTC3203-Y (SE620/SE720/SE727E/SX720/SX727D/SE820)			
Q6E02	1-804-421-11	TR-SMALL SIGNAL KSC945 (SE620/SE720/SE727E/SX720/SX727D/SE820)			
Q6E03	1-804-429-11	TR-DIGITAL KSR2001 (SE620/SE720/SE727E/SX720/SX727D/SE820)			
Q6P01	1-804-420-11	TR-SMALL SIGNAL KSA733			
Q6P02	1-804-420-11	TR-SMALL SIGNAL KSA733			
Q804	1-804-429-11	TR-DIGITAL KSR2001			
Q806	1-804-429-11	TR-DIGITAL KSR2001(EXCEPT SE620D,N)			
Q809	1-804-421-11	TR-SMALL SIGNAL KSC945			
Q810	1-804-421-11	TR-SMALL SIGNAL KSC945 (EXCEPT SE620D,N)			
		< RESISTOR >			
R1P102	1-216-667-11	R-CHIP	4.7K	5%	1/10W (EXCEPT SE220/SE420K)
R1P103	1-247-815-11	R-CARBON	220	5%	1/8W (EXCEPT SE220/SE420K)
R1P104	1-216-627-11	R-CHIP	100	5%	1/10W (EXCEPT SE220/SE420K)
R1P105	1-216-675-11	R-CHIP	10K	5%	1/10W (EXCEPT SE220/SE420K)
R1P108	1-247-845-11	R-CARBON	3.9K	5%	1/4W
R1P110	1-216-627-11	R-CHIP	100	5%	1/10W
R1SD11	1-247-880-11	R-CARBON	110K	5%	1/8W
R1SD13	1-247-880-11	R-CARBON	110K	5%	1/8W
R1SD14	1-247-880-11	R-CARBON	110K	5%	1/8W
R1SD15	1-247-880-11	R-CARBON	110K	5%	1/8W
R1SD16	1-215-901-11	R-METAL OXIDE(S)	33K	5%	2W
R1SD31	1-247-815-11	R-CARBON	220	5%	1/8W
R1SD32	1-247-833-11	R-CARBON	1.2K	5%	1/8W
R1SR11	1-216-367-11	R-METAL OXIDE	0.68	5%	2W
R1SR12	1-244-369-11	R-METAL OXIDE	300	5%	1W
R1SS03	1-245-346-11	R-FUSIBLE(S)	10	5%	2W (SE220/SE420K)
R1SS10	1-244-373-11	R-CEMENT	2.7	10%	2W
R1SS11	1-215-901-11	R-METAL OXIDE(S)	33K	5%	2W
R1SS32	1-216-651-11	R-CHIP	1K	5%	1/10W
R1SS33	1-244-372-11	R-METAL	3K	1%	1/8W
R1SS34	1-244-371-11	R-METAL	2.2K	1%	1/8W
R316	1-216-673-11	R-CHIP	8.2K	5%	1/10W
R323	1-216-665-11	R-CHIP	3.9K	5%	1/10W
R327	1-216-667-11	R-CHIP	4.7K	5%	1/10W
R329	1-216-661-11	R-CHIP	2.7K	5%	1/10W
R333	1-216-693-11	R-CHIP	56K	5%	1/10W
R334	1-216-655-11	R-CHIP	1.5K	5%	1/10W (EXCEPT SE220/SE420K)
R350	1-216-655-11	R-CHIP	1.5K	5%	1/10W (SE220B/SE620B/SE720B/SE820B)
R372	1-216-651-11	R-CHIP	1K	5%	1/10W
R374	1-216-627-11	R-CHIP	100	5%	1/10W
R3A09	1-216-295-11	R-CHIP	0	5%	1/10W
R3A11	1-216-659-11	R-CHIP	2.2K	5%	1/10W
R3A12	1-216-627-11	R-CHIP	100	5%	1/10W
R3A13	1-216-683-11	R-CHIP	22K	5%	1/10W (SE820)
R3A13	1-216-691-11	R-CHIP	47K	5%	1/10W (SE220/SE420K/SE620)
R3A16	1-216-675-11	R-CHIP	10K	5%	1/10W
R3A17	1-216-659-11	R-CHIP	2.2K	5%	1/10W
R3A18	1-216-659-11	R-CHIP	2.2K	5%	1/10W
R3A24	1-216-683-11	R-CHIP	22K	5%	1/10W
R3A31	1-216-295-11	R-CHIP	0M	5%	1/10W
R3A51	1-216-675-11	R-CHIP	10K	5%	1/10W
R3D01	1-216-691-11	R-CHIP	47K	5%	1/10W (SE820)
R3D02	1-216-667-11	R-CHIP	4.7K	5%	1/10W (SE820)
R3D03	1-216-683-11	R-CHIP	22K	5%	1/10W (SE820)
R3S01	1-216-651-11	R-CHIP	1K	5%	1/10W (SE220B/SE620B/SE720B/SE820B)
R401	1-216-691-11	R-CHIP	47K	5%	1/10W (EXCEPT SE220B/SE620B/SE720B/SE820B)
R402	1-216-627-11	R-CHIP	100	5%	1/10W (EXCEPT SE220B/SE620B/SE720B/SE820B)
R403	1-216-627-11	R-CHIP	100	5%	1/10W
R404	1-216-627-11	R-CHIP	100	5%	1/10W
R407	1-216-659-11	R-CHIP	2.2K	5%	1/10W (EXCEPT SE220/SE420K/SE620B/SE720B/SE820B)
R407	1-216-673-11	R-CHIP	8.2K	5%	1/10W (SE220D,G,I/SE420K)
R408	1-247-833-11	R-CARBON	1.2K	5%	1/8W (EXCEPT SE220B/SE620B/SE720B/SE820B)
R4N01	1-216-651-11	R-CHIP	1K	5%	1/10W (EXCEPT SE220/SE420K)
R4N02	1-216-627-11	R-CHIP	100	5%	1/10W (EXCEPT SE220/SE420K)
R4N03	1-216-627-11	R-CHIP	100	5%	1/10W (EXCEPT SE220/SE420K)
R4N04	1-216-661-11	R-CHIP	27K	5%	1/10W (EXCEPT SE220/SE420K)
R503	1-216-643-11	R-CHIP	470	5%	1/10W (EXCEPT SE220/SE420K)
R512	1-216-687-11	R-CHIP	33K	5%	1/10W (EXCEPT SE220/SE420K)
R514	1-216-691-11	R-CHIP	47K	5%	1/10W (EXCEPT SE220/SE420K)
R546	1-216-651-11	R-CHIP	1K	5%	1/10W (EXCEPT SE220/SE420K)
R547	1-216-651-11	R-CHIP	1K	5%	1/10W (EXCEPT SE220/SE420K)
R570	1-216-651-11	R-CHIP	1K	5%	1/10W (EXCEPT SE220/SE420K)
R571	1-216-693-11	R-CHIP	56K	5%	1/10W (EXCEPT SE220/SE420K)
R601	1-247-831-11	R-CARBON	1K	5%	1/8W
R602	1-247-831-11	R-CARBON	1K	5%	1/8W

MAIN

Ref. No.	Part No.	Description			Remarks
R603	1-247-831-11	R-CARBON	1K	5%	1/8W
R604	1-247-831-11	R-CARBON	1K	5%	1/8W
R605	1-247-831-11	R-CARBON	1K	5%	1/8W
R607	1-247-831-11	R-CARBON	1K	5%	1/8W
R608	1-247-873-11	R-CARBON	56K	5%	1/8W
R609	1-247-873-11	R-CARBON	56K	5%	1/8W
R610	1-247-831-11	R-CARBON	1K	5%	1/8W
R611	1-247-831-11	R-CARBON	1K	5%	1/8W
R613	1-216-651-11	R-CHIP	1K	5%	1/10W (SE420K/SE620/SE720N/SX720N/SE820N)
R614	1-247-831-11	R-CARBON	1K	5%	1/8W
R631	1-216-651-11	R-CHIP	1K	5%	1/10W
R638	1-247-831-11	R-CARBON	1K	5%	1/8W
R639	1-247-831-11	R-CARBON	1K	5%	1/8W
R640	1-216-675-11	R-CHIP	10K	5%	1/10W
R641	1-216-643-11	R-CHIP	470	5%	1/10W (SE220/SE420K/SE620)
R642	1-216-643-11	R-CHIP	470	5%	1/10W (SE220/SE420K/SE620)
R644	1-247-831-11	R-CARBON	1K	5%	1/8W
R656	1-216-675-11	R-CHIP	10K	5%	1/10W
R657	1-247-875-11	R-CARBON	68K	5%	1/8W (SE420K/SE620/SE720N/SX720N/SE820N)
R661	1-216-687-11	R-CHIP	33K	5%	1/10W
R666	1-216-643-11	R-CHIP	470	5%	1/10W
R667	1-216-643-11	R-CHIP	470	5%	1/10W
R668	1-216-675-11	R-CHIP	10K	5%	1/10W
R669	1-216-675-11	R-CHIP	10K	5%	1/10W
R670	1-216-667-11	R-CHIP	4.7K	5%	1/10W
R671	1-216-667-11	R-CHIP	4.7K	5%	1/10W
R672	1-216-667-11	R-CHIP	4.7K	5%	1/10W
R675	1-247-837-11	R-CARBON	180	5%	1/4W
R676	1-216-686-11	R-CHIP	30K	5%	1/10W (SE220/SE420K/SE620)
R678	1-216-683-11	R-CHIP	22K	5%	1/10W (SE220/SE420K/SE620)
R679	1-247-815-11	R-CARBON	220	5%	1/8W
R682	1-216-683-11	R-CHIP	22K	5%	1/10W
R690	1-216-693-11	R-CHIP	56K	5%	1/10W
R691	1-247-815-11	R-CARBON	220	5%	1/8W
R693	1-216-691-11	R-CHIP	47K	5%	1/10W
R694	1-216-691-11	R-CHIP	47K	5%	1/10W
R695	1-216-627-11	R-CHIP	100	5%	1/10W (SE220B/SE620B/SE720B/SE820B)
R696	1-247-831-11	R-CARBON	1K	5%	1/8W
R697	1-216-627-11	R-CHIP	100	5%	1/10W (SE220B,I/SE620B/SE720B/SE820B)
R698	1-216-675-11	R-CHIP	10K	5%	1/10W
R6E01	1-216-675-11	R-CHIP	10K	5%	1/10W (SE720/SE727E/SX720/SX727D/SE820)
R6E02	1-216-659-11	R-CHIP	2.2K	5%	1/10W (SE720/SE727E/SX720/SX727D/SE820)
R6P03	1-216-661-11	R-CHIP	2.7K	5%	1/10W (SE220/SE720/SE727E/SX720/SX727D/SE820)
R6P04	1-216-675-11	R-CHIP	10K	5%	1/10W (SE220/SE720/SX720/SX727D/SE820)
R6P07	1-216-635-11	R-CHIP	220	5%	1/10W
R6P09	1-216-295-11	R-CHIP	0	5%	1/10W (EXCEPT SE420K/SE620)
R6P09	1-216-659-11	R-CHIP	2.2K	5%	1/10W (SE420K/SE620)
R6P10	1-247-815-11	R-CARBON	220	5%	1/8W
R701	1-216-686-11	R-CHIP	30K	5%	1/10W (SE720/SE727E/SX720/SX727D/SE820)
R731	1-216-675-11	R-CHIP	10K	5%	1/10W
R751	1-216-661-11	R-CHIP	27K	5%	1/10W (SE720/SE727E/SX720/SX727D/SE820)
R752	1-216-635-11	R-CHIP	220	5%	1/10W (SE720/SE727E/SX720/SX727D/SE820)
R777	1-216-683-11	R-CHIP	22K	5%	1/10W (SE220/SE720D,E,G,I,B/SX720D,E/ SE727E/SX727D/SE820B,D,E,G)
R805	1-216-651-11	R-CHIP	1K	5%	1/10W (SE720/SE727E/SX720/SX727D/SE820)
R806	1-216-651-11	R-CHIP	1K	5%	1/10W (SE720/SE727E/SX720/SX727D/SE820)
R809	1-247-828-11	R-CARBON	75	5%	1/8W (EXCEPT SE620D,N)
R810	1-216-651-11	R-CHIP	1K	5%	1/10W (EXCEPT SE620D,N)
R811	1-216-651-11	R-CHIP	1K	5%	1/10W (EXCEPT SE620D,N)
R813	1-216-651-11	R-CHIP	1K	5%	1/10W
R814	1-216-651-11	R-CHIP	1K	5%	1/10W
R815	1-216-651-11	R-CHIP	1K	5%	1/10W
R816	1-216-651-11	R-CHIP	1K	5%	1/10W
R819	1-216-651-11	R-CHIP	1K	5%	1/10W (EXCEPT SE620D,N)
R820	1-216-651-11	R-CHIP	1K	5%	1/10W (EXCEPT SE620D,N)
R821	1-216-687-11	R-CHIP	33K	5%	1/10W (EXCEPT SE620D,N)
R822	1-216-683-11	R-CHIP	22K	5%	1/10W (EXCEPT SE620D,N)
		< PHOTO TRANSISTOR >			
S601	1-804-439-11	PHOTO TR			
S602	1-804-439-11	PHOTO TR			
		< SWITCH >			
SW601	1-786-198-11	SWITCH-MODE			
		< TM BLOCK >			
TM401	1-693-553-11	TM BLOCK	TCPL0601PD11A		(SE220B/SE620B/SE720B/SE820B)
TM401	1-693-584-11	TM BLOCK	TCMB0600PD13A		(SE220D)
TM401	1-693-585-11	TM BLOCK	TCMI0610PD13A		(SE220G/SE720G/SE820G)
TM401	1-693-589-11	TM BLOCK	TCMK0601PD13A		(SE220I/SE420K/SE620D,E,N/SE720D,E,I,N/ SX720/SX727D/SE727E/SE820D,E,N)
		< VARISTOR >			
VA1SS1	1-804-437-11	VARISTOR			

Ref. No.	Part No.	Description	Remarks
		< RESISTOR >	
W079	1-216-295-11	R-CHIP 0 5% 1/10W	(SE220/SE420K)
W172	1-216-295-11	R-CHIP 0 5% 1/10W	(SE220/SE420K/SE620)
W199	1-216-295-11	R-CHIP 0 5% 1/10W	
W376	1-216-295-11	R-CHIP 0 5% 1/10W	(SE220/SE420K/SE620)
W383	1-216-295-11	R-CHIP 0 5% 1/10W	(SE220/SE420K/SE620)
W384	1-216-295-11	R-CHIP 0 5% 1/10W	
W386	1-216-295-11	R-CHIP 0 5% 1/10W	(SE220/SE420K/SE620)
W506	1-216-295-11	R-CHIP 0 5% 1/10W	(SE220/SE420K/SE620)
W515	1-216-295-11	R-CHIP 0 5% 1/10W	
W701	1-216-295-11	R-CHIP 0 5% 1/10W	(SE220/SE420K/SE620)
W702	1-216-295-11	R-CHIP 0 5% 1/10W	(SE220/SE420K/SE620)
W750	1-216-295-11	R-CHIP 0 5% 1/10W	(SE220/SE420K/SE620)
W751	1-216-295-11	R-CHIP 0 5% 1/10W	(SE220/SE420K/SE620)
W752	1-216-295-11	R-CHIP 0 5% 1/10W	(SE220/SE420K/SE620)
		< VIBRATOR >	
XT01	1-795-616-11	RESONATOR-CERAMIC 3.84MHz	(EXCEPT SE727E/SX727D/SE820)
XT301	1-795-330-11	CRYSTAL-UNIT 4.433619MHz	
XT4N01	1-795-615-11	CRYSTAL-UNIT 18.432MHz	(EXCEPT SE220/SE420K)
XT601	1-795-332-11	CRYSTAL-UNIT 32.768KHz	(SE420K/SE620/SE720N/SX720N/SE820N)
XT602	1-795-331-11	CRYSTAL-UNIT 8MHz	
XT750	1-795-625-11	CRYSTAL-UNIT 5MHz	(SE720/SE727E/SX720/SX727D/SE820)
		< DIODE >	
ZD1P01	1-804-416-11	DIODE-ZENER MTZJ5.1B	(EXCEPT SE220/SE420K)
ZD1P02	1-804-416-11	DIODE-ZENER MTZJ5.1B	
ZD1P03	1-804-417-11	DIODE-ZENER MTZJ9.1B	(EXCEPT SE220/SE420K)
ZD1P04	1-804-417-11	DIODE-ZENER MTZJ9.1B	
ZD1SS1	1-804-415-11	DIODE-ZENER UZP43B	

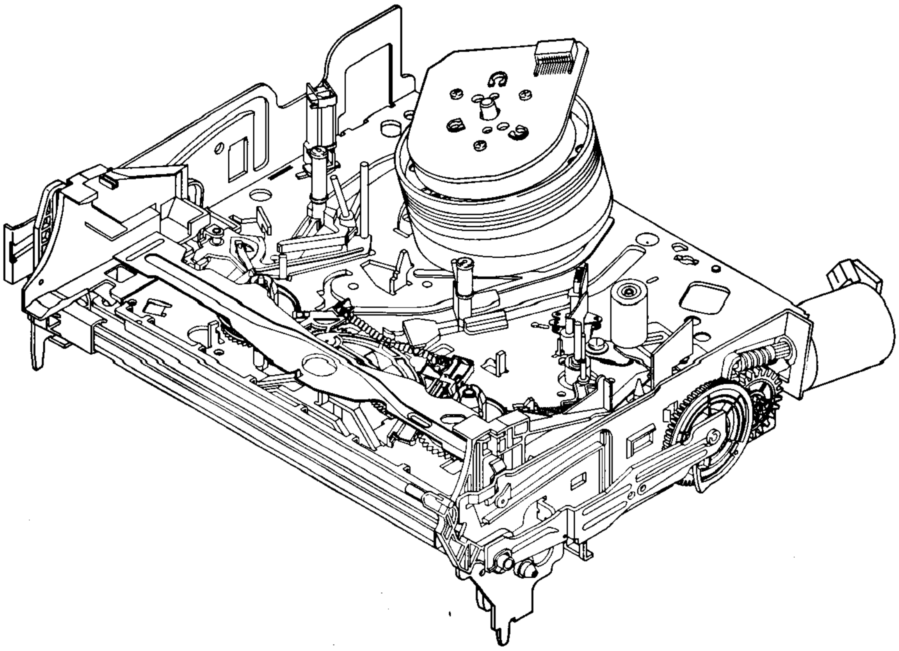
Ref. No.	Part No.	Description	Remarks
		ACCESSORIES ***********	
	1-477-269-11	REMOCON-ASSY (RMT-V405)	(SE220D,I,G/SE420K)
	1-477-270-11	REMOCON-ASSY (RMT-V405A)	(SE220B)
	1-477-271-11	REMOCON-ASSY (RMT-V406)	(SE620D,E,N/SE720D,E,I,G,N)
	1-477-272-11	REMOCON-ASSY (RMT-V406A)	(SE620B/SE720B)
	1-477-273-11	REMOCON-ASSY (RMT-V407A)	(SE727E/SE820D,E,G,N)
	1-477-274-11	REMOCON-ASSY (RMT-V407B)	(SE820B)
	1-477-275-11	REMOCON-ASSY (RMT-V407C)	(SX727D)
	1-477-276-11	REMOCON-ASSY (RMT-V406B)	(SX720)
	3-075-088-01	DOOR-BATTERY REMOCON	(SE220/SE420K/SE620/SE720/SE727E/SE820)
	3-075-089-01	DOOR-BATTERY REMOCON (Black)	(SX720/SX727D)
	3-073-151-11	MANUAL USERS	(SE220D/SE620E/SE720D,E/SX720D,E/SE820D,E)
	3-073-151-21	MANUAL USERS	(SE620E/SE720E/SE820E)
	3-073-151-31	MANUAL USERS	(SE220D/SE720D/SX720D/SE820D/SX727D)
	3-073-151-41	MANUAL USERS	(SE220D/SE620D/SE720D/SX720D/SE820D)
	3-073-151-51	MANUAL USERS	(SE220D/SE620D,E/SE720D,E/SX720D,E/SE820D,E)
	3-073-151-61	MANUAL USERS	(SE620E/SE720E/SX720E/SE820E)
	3-073-151-71	MANUAL USERS	(SE620E/SE720E/SX720E/SE820E)
	3-073-152-11	MANUAL USERS	(SE727E)
	3-073-152-21	MANUAL USERS	(SE727E)
	3-073-152-31	MANUAL USERS	(SE727E)
	3-073-153-11	MANUAL USERS	(SE220G,I/SE720G,I/SE820G)
	3-073-154-11	MANUAL USERS	(SE220B/SE620B/SE720B/SE820B)
	3-073-155-11	MANUAL USERS	(SE420K/SE620N/SE720N/SX720N/SE820N)
	3-073-155-21	MANUAL USERS	(SE420K/SE620N/SE820N)
	3-073-155-31	MANUAL USERS	(SE420K/SE620N/SE720N/SE820N/SX720N)
	3-073-155-41	MANUAL USERS	(SE420K/SE620N/SE720N/SE820N/SX720N)
	3-073-155-51	MANUAL USERS	(SE420K/SE620N/SE720N/SE820N/SX720N)

VIDE-V28112

VHS MECHANICAL ADJUSTMENT MANUAL VII

TS-10 MECHANISM

Please use this manual with the service manual.



VHS MECHANISM DECK

SONY®

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1. Disassembly and Reassembly

1-1 Deck Parts Locations

1-1-1 Top View

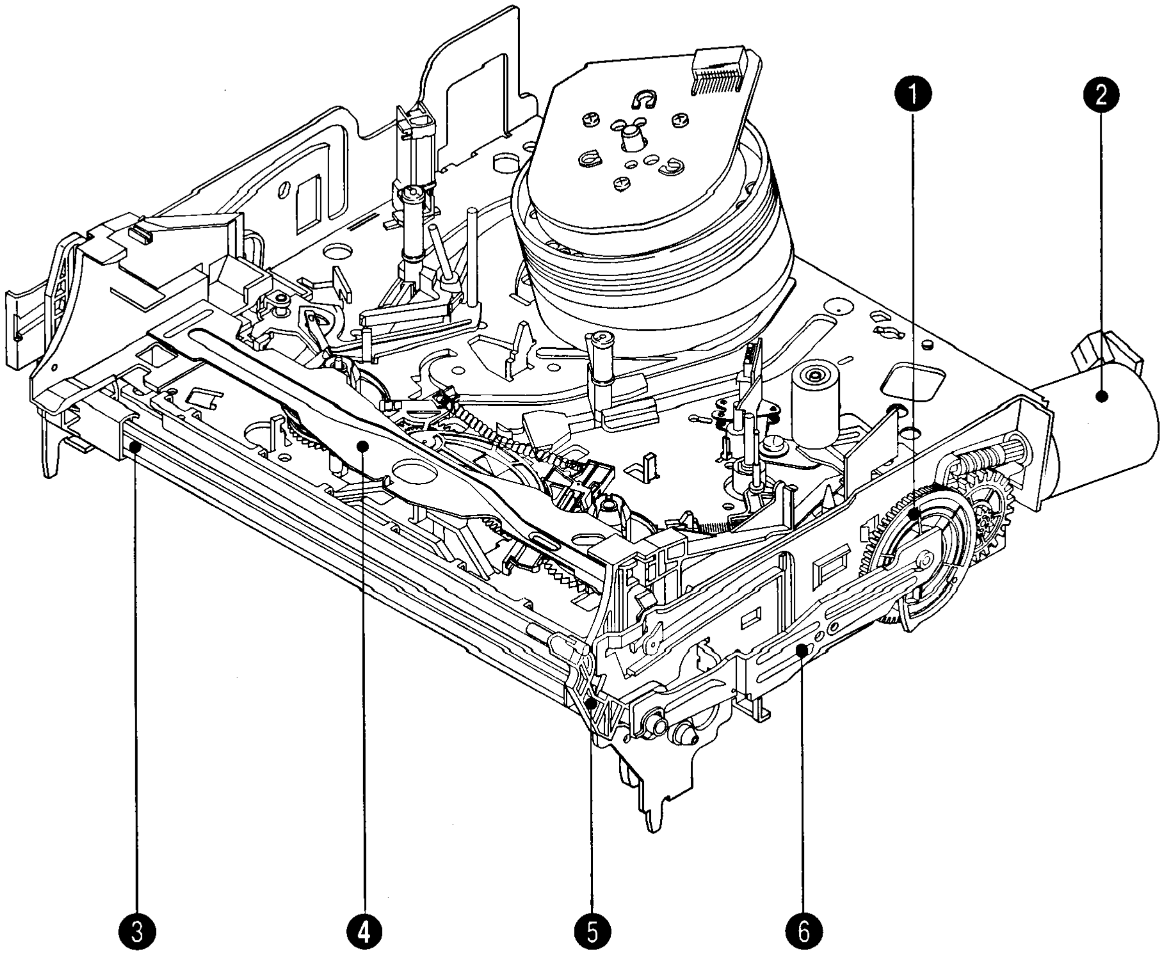


Fig. 1-1 Top parts Location-1

❶ GEAR FL CAM
❷ MOTOR LOADING ASS'Y
❸ LEVER FL ARM ASS'Y
❹ HOLDER FL CASSETTE ASS'Y
❺ LEVER FL DOOR
❻ SLIDER FL DRIVE

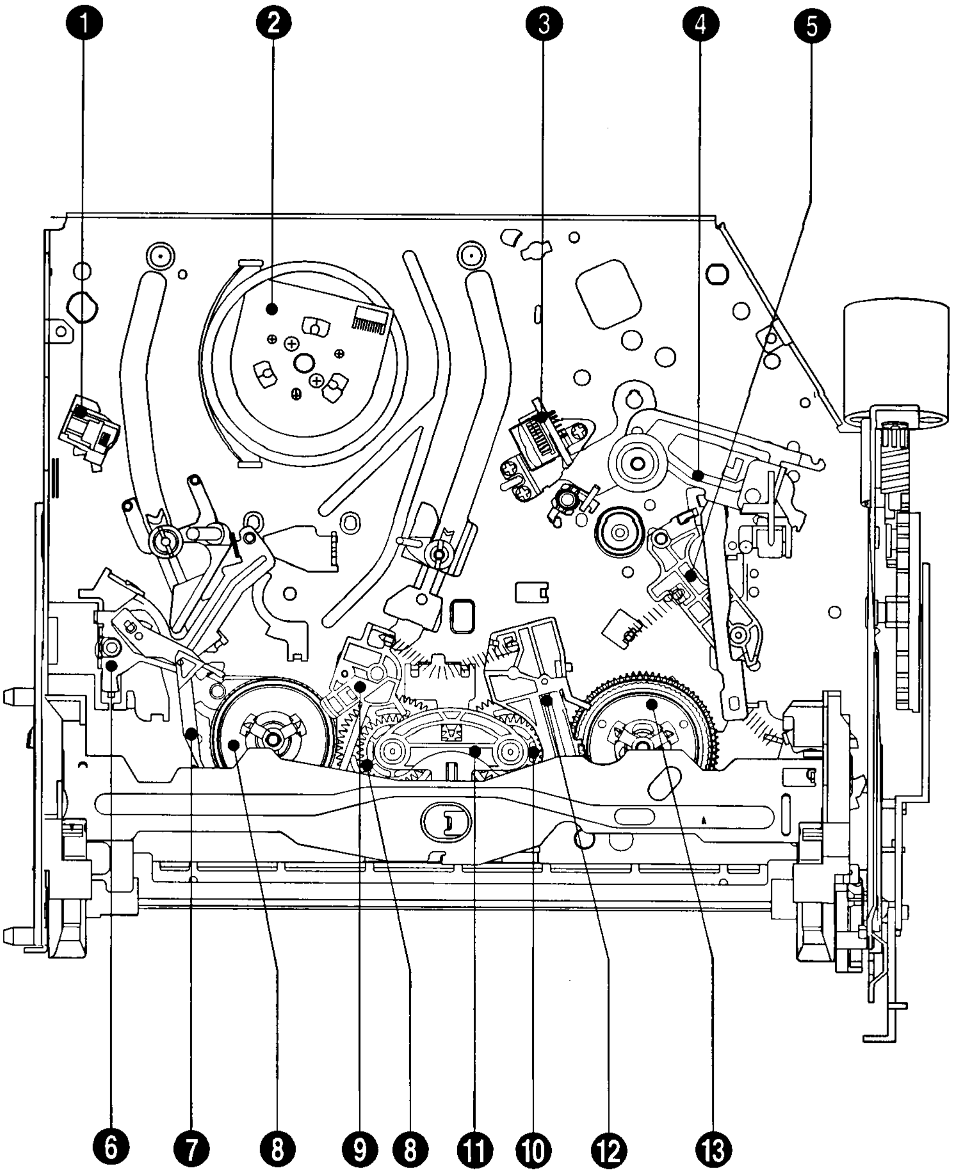


Fig. 1-2 Top Parts Location-2

❶ FE HEAD
❷ CYLINDER ASS'Y
❸ ACE HEAD ASS'Y
❹ LEVER UNIT PINCH ASS'Y
❺ LEVER #9 GUIDE ASS'Y
❻ LEVER TENSION ASS'Y
❼ BAND BRAKE ASS'Y
❽ DISK S REEL
❾ LEVER S BRAKE ASS'Y
❿ GEAR IDLE
⓫ LEVER IDLE
⓬ LEVER T BRAKE ASS'Y
⓭ DISK T REEL

1-1-2 Bottom View

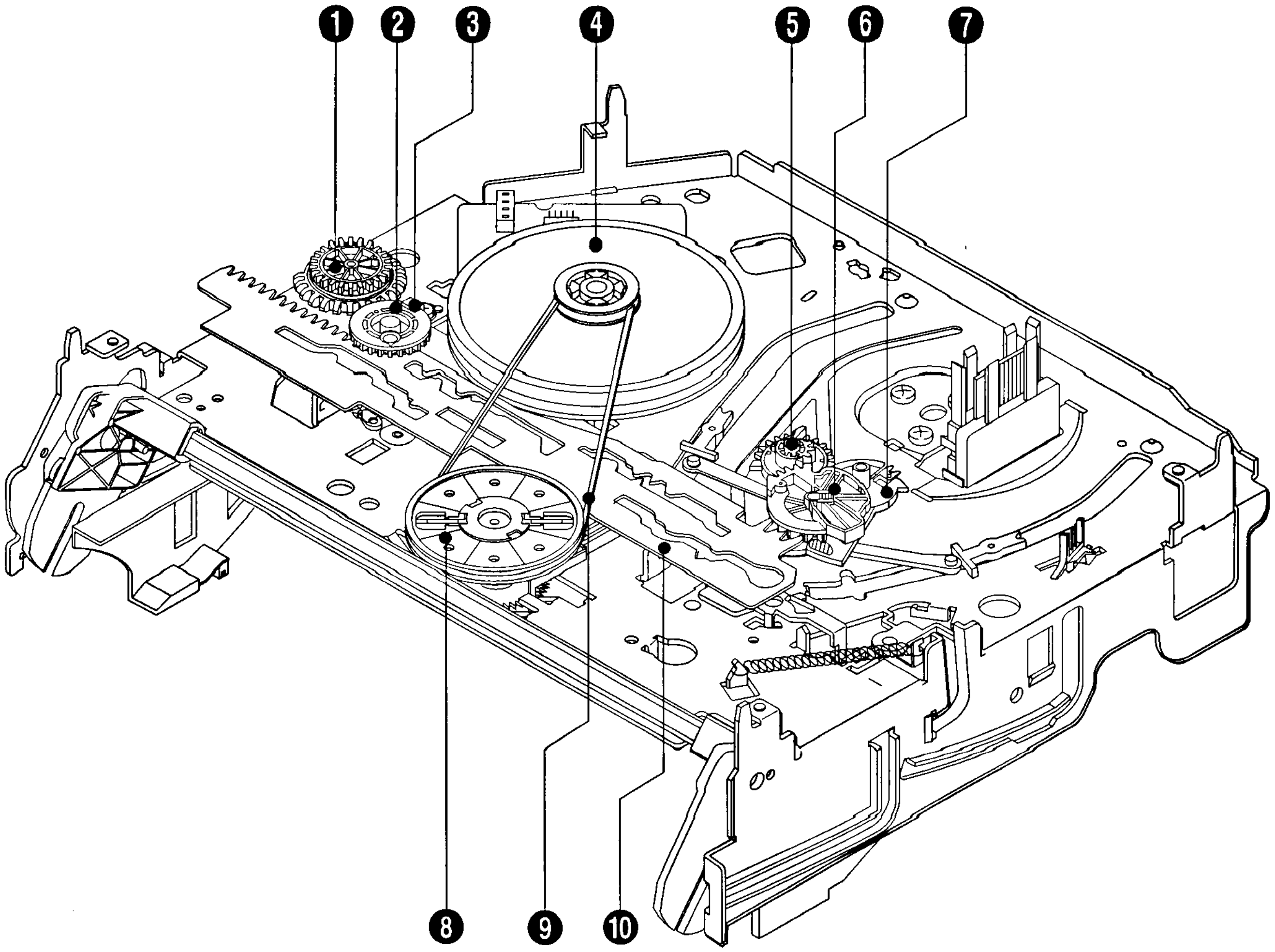


Fig. 1-3 Bottom Parts Location

❶ GEAR JOINT 1
❷ GEAR JOINT 2
❸ BRACKET GEAR
❹ MOTOR CAPSTAN ASS'Y
❺ LEVER T LOAD ASS'Y
❻ GEAR LOADING DRIVE
❼ LEVER S LOAD ASS'Y
❽ HOLDER CLUTCH ASS'Y
❾ BELT PULLEY
❿ SLIDER CAM

1-2 Main Deck

1-2-1 Lever FL Door Removal

1) Push the Holder FL Cassette Ass'y ❶ about 20mm in the direction of arrow "A".
2) Rotate the Lever FL Door ❷ in the direction of arrow "B".
3) Release the Hook ❸ and Remove the Lever FL Door ❷ in the direction of arrow "C".

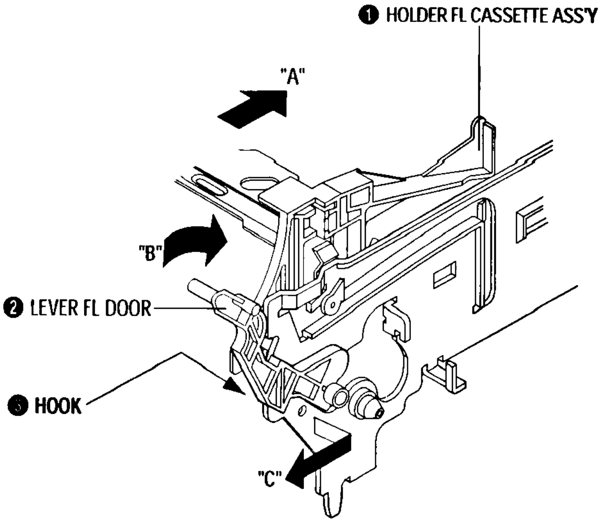

❶ HOLDER FL CASSETTE ASS'Y
"A"
"B"
❷ LEVER FL DOOR
❸ HOOK
"C"

Fig. 1-4 Lever FL Door Removal

1-2-2 Holder FL Cassette Ass'y Removal

1) Pull the Holder FL Cassette Ass'y ❶ to the eject position.
2) Pull the Holder FL Cassette Ass'y ❶ as grasping the Holder FL Cassette Ass'y ❶ and Lever FL Cassette-R ❷ in the same time to release hooking from Main Base until the Boss [A] of Holder FL Cassette Ass'y ❶ is taken out from the Rail [B].
3) Lift the Holder FL Cassette Ass'y ❶, in this time, you have to grasp the Lever FL Cassette-R ❷ Continuously until the Holder FL Cassette Ass'y ❶ is taken out completely.

Note : Be sure to insert Lever FL Cassette-R ❷ in the direction of "A" to prevent separation and breakage of the Lever FL Cassette-R ❷ at disassembling and reassembling.

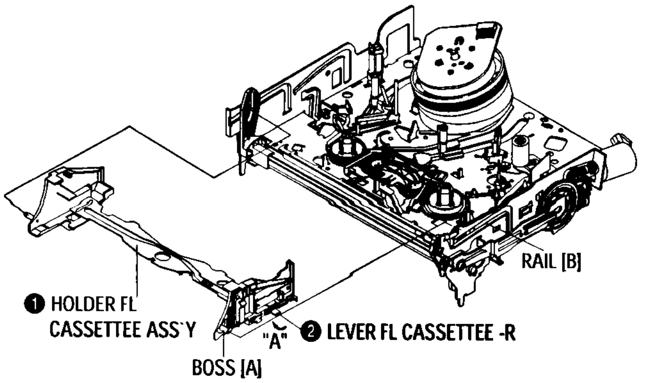

RAIL [B]
❶ HOLDER FL CASSETTEE ASS'Y
"A"
❷ LEVER FL CASSETTEE -R
BOSS [A]

Fig. 1-5 Holder FL Cassette Ass'y Removal

1-2-3 Slider FL Drive, Gear FL Cam Removal

1) Pull the Slider FL Drive ❶ to the front direction.
2) Remove the Slider FL Drive ❶ in the direction of arrow. (Refer to Fig. 1-6)
3) Remove the Gear FL cam ❷.

Note : When reinstalling be sure to reassemble Slider FL drive ❶ after you insert the Boss of Lever FL ARM-R in Groove of Slider Fl drive ❶.

Assembly ; Align the Gear FL Cam ❶ with the Gear worm wheel Post as shown drawing.
(Refer to Timing point)

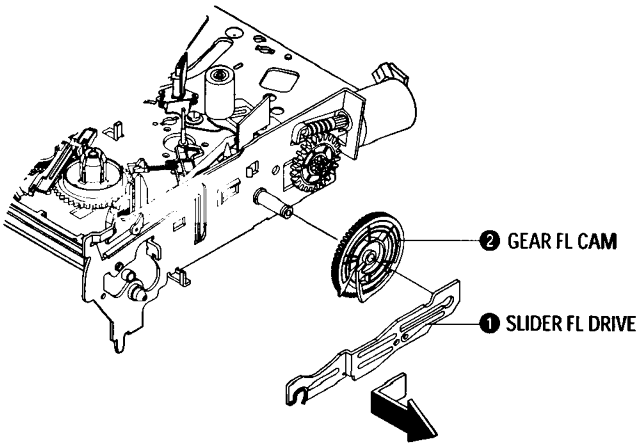

❷ GEAR FL CAM
❶ SLIDER FL DRIVE

Fig. 1-6 Slider FL Drive Removal

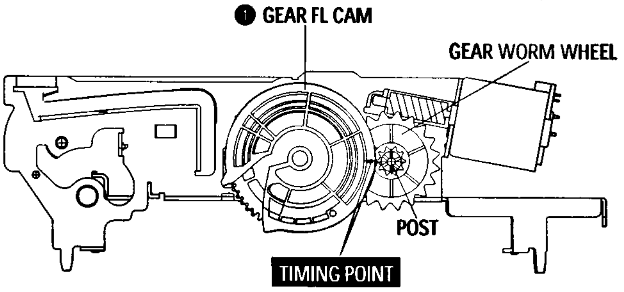

❶ GEAR FL CAM
GEAR WORM WHEEL
POST
TIMING POINT

Fig. 1-7 Gear FL Cam, Gear Worm

1-2-4 Lever FL Arm Ass'y Removal

1) Push the hole "A" in the direction of arrow "B" use the pin.(about Dia.2.5)
2) Pull out the Lever FL Arm Ass'y ❶ from the Boss of Main Base.
3) Remove the Lever FL Arm Ass'y ❶ in the direction of arrow "C".

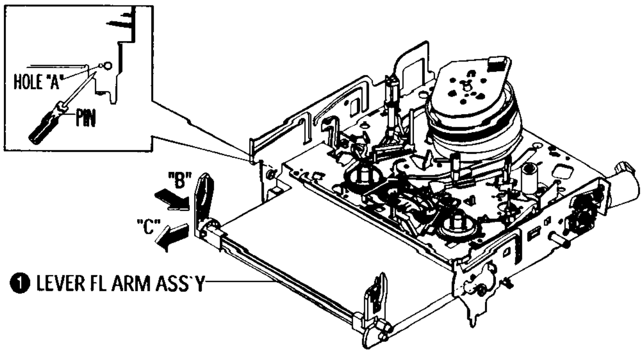

HOLE "A"
PIN
"B"
"C"
❶ LEVER FL ARM ASS'Y

Fig. 1-8 Lever FL Arm Ass'y Removal

1-2-5 Gear Worm Wheel Removal

1) Remove the Gear Worm wheel ❶.

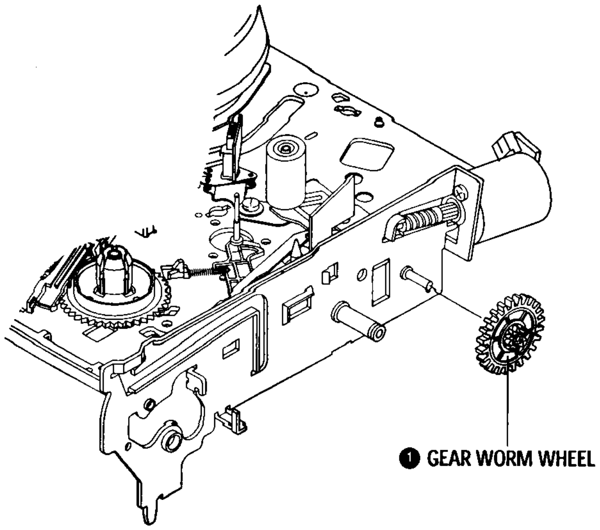

❶ GEAR WORM WHEEL

Fig. 1-9 Gear Worm Wheel Removal

1-2-6 Motor Loading Ass'y Removal

1) Remove the screw ❶.
2) Remove the Motor Loading Ass'y ❷.

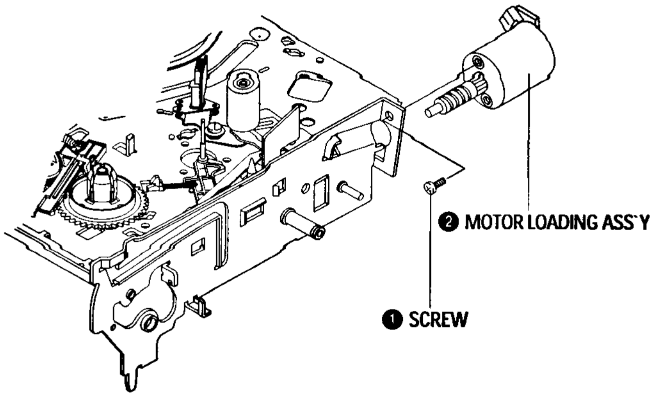

❷ MOTOR LOADING ASS'Y
❶ SCREW

Fig. 1-10 Motor Loading Ass'y Removal

1-2-7 Bracket Gear, Gear Joint 2, 1 Removal

1) Remove the SCREW ❶.
2) Remove the Bracket Gear ❷.
3) Remove the Gear Joint 2 ❸.
4) Remove the Gear Joint 1 ❹.

Assembly :

1) Be sure to align dot mark of Gear Joint 1 ❶ with dot mark of Gear Joint 2 ❷ as shown Fig 1-12. (Refer to Timing point1)
2) Confirm the Timing Point 2 of the Gear Joint 2 ❷ and Slider Cam ❸.

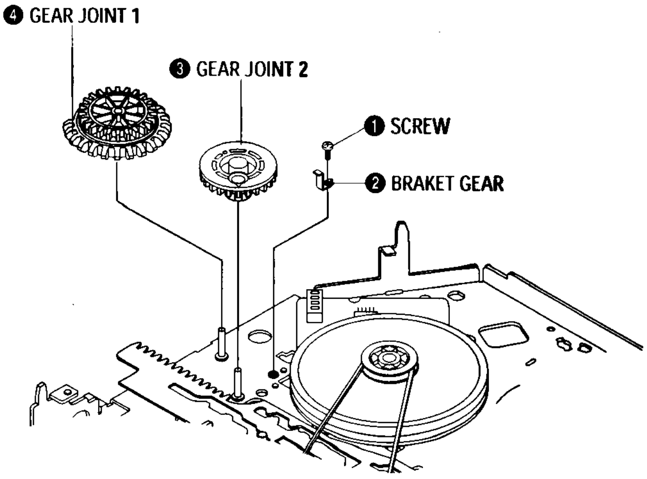

❹ GEAR JOINT 1
❸ GEAR JOINT 2
❶ SCREW
❷ BRAKET GEAR

Fig. 1-11 Bracket Gear, Gear Joint 1,2 Removal

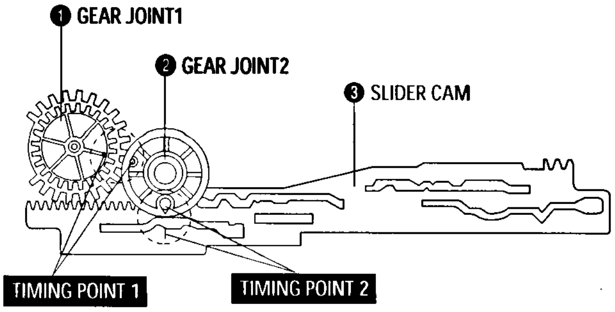

❶ GEAR JOINT1
❷ GEAR JOINT2
❸ SLIDER CAM
TIMING POINT 1
TIMING POINT 2

Fig. 1-12 Gear Joint 1,2 Assembly

1-2-8 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Removal

1) Remove the Belt Pulley. (Refer to Fig. 1-30)
2) Remove the Gear Loading Drive ❶ after releasing Hook [A] in the direction arrow as shown in detail drawing.
3) Remove the Slider Cam ❷.
4) Remove the Lever Load S ❸, Link Load S ❺ & Lever Load T ❹, Link Load T ❻.

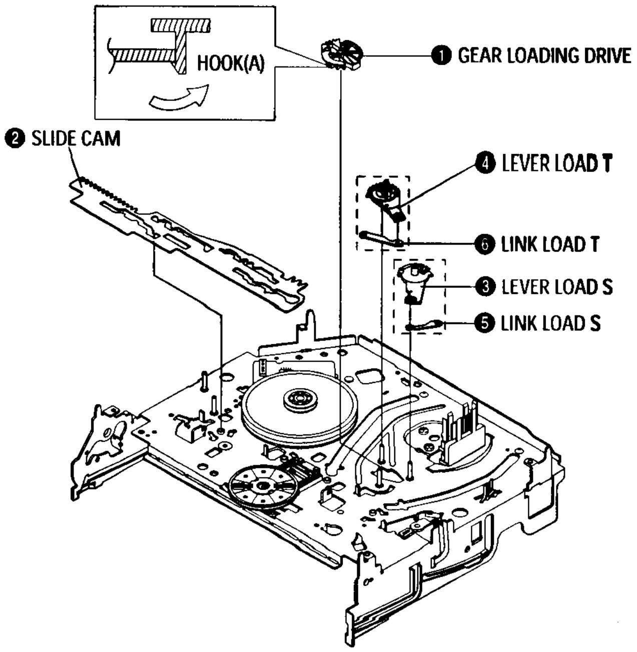

HOOK(A)
❶ GEAR LOADING DRIVE
❷ SLIDE CAM
❹ LEVER LOAD T
❻ LINK LOAD T
❸ LEVER LOAD S
❺ LINK LOAD S

Fig. 1-13 Gear Loading Drive, Slider Cam, Lever T, S Load Ass'y Removal

1-2-9 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Assembly

1) When reinstalling, be sure to align dot of Lever Load T Ass'y ❶ with dot of Lever Load S Ass'y ❷ as shown in drawing, (Refer to Timing Point 1).
2) Insert the Pin A,B,C,D into the Slider Cam ❸ hole,
3) Be sure to align dot of Lever Load T ❶ and dot of Gear Loading Drive ❹, (Refer to Timing Point 2).
4) Aline dot of Gear Loading drive ❹ with mark of Slider Cam ❸ as shown in drawing(Refer to Timing Point 3).

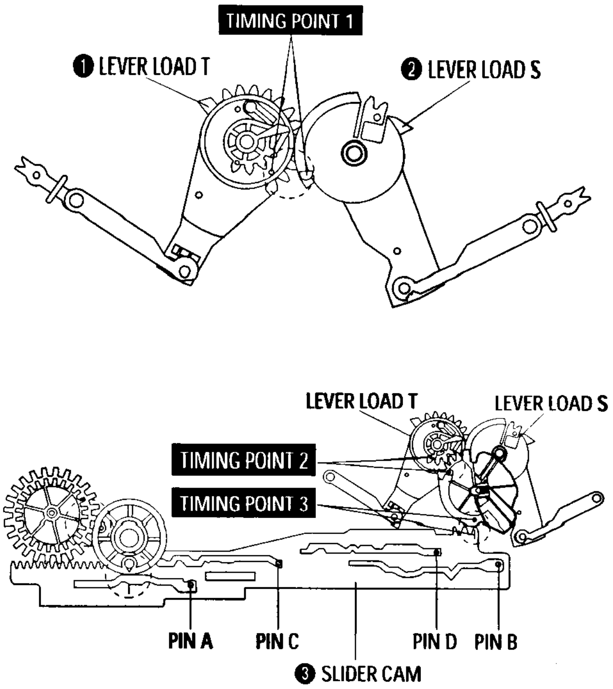

TIMING POINT 1
❶ LEVER LOAD T
❷ LEVER LOAD S
LEVER LOAD T
LEVER LOAD S
TIMING POINT 2
TIMING POINT 3
PIN A
PIN C
PIN D
PIN B
❸ SLIDER CAM

Fig. 1-14 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Assembly

1-2-10 Lever Pinch Drive, Lever Tension Drive Removal

1) Remove the Lever Pinch Drive ❶, Lever Tension Drive ❷.

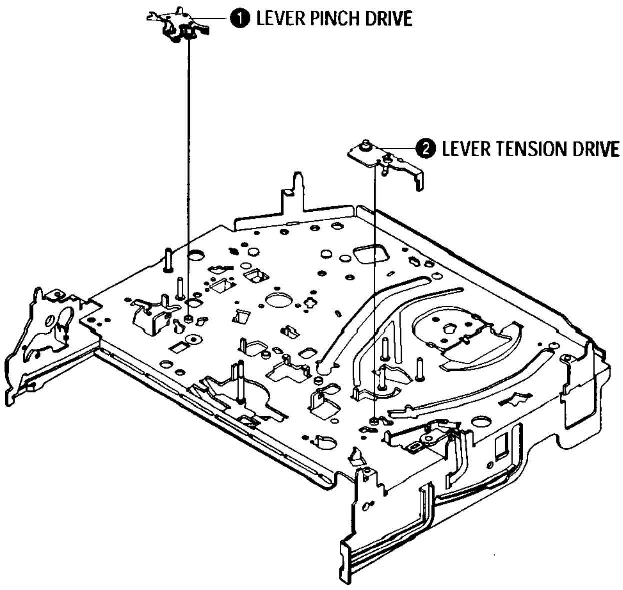

❶ LEVER PINCH DRIVE
❷ LEVER TENSION DRIVE

Fig. 1-15 Lever Pinch Drive, Lever Tension Drive Removal

1-2-11 Lever Tension Ass'y, Band Brake Ass'y Removal

1) Remove the Lever Brake S Ass'y (Refer to Fig 1-17).
2) Remove the Spring Tension Lever ❶.
3) Rotate stopper of Main Base in the direction of arrow "A".
4) Lift the Lever Tension Ass'y ❷ & Band brake Ass'y ❸.

Note :

1) When replacing the Lever Tension Ass'y ❷, be sure to apply Grease on the post,
2) Take care not to touch stain on the felt side, and not to be folder and broken Band brake Ass'y
3) After Lever Tension Ass'y seated, Rotate stopper of Main Base to the Mark[B].

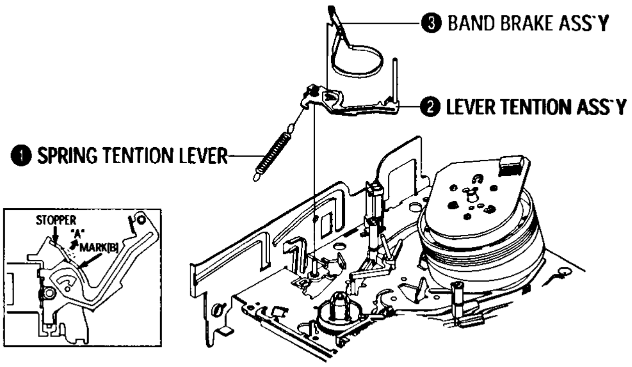

❸ BAND BRAKE ASS'Y
❷ LEVER TENTION ASS'Y
❶ SPRING TENTION LEVER
STOPPER
"A"
MARK[B]

Fig. 1-16 Lever Tension Ass'y, Band Brake Ass'y Removal

1-2-12 Lever Brake S, T Ass'y Removal

1) Release the Hook [A] and the Hook [B], [C] in the direction of arrow as shown in Fig 1-17.
2) Lift the Lever S, T Brake Ass'y ❶, ❷ with spring brake ❸.

Assembly :

1)Assembly the Lever S Brake Ass'y ❶ on the Main Base.
2)Assembly the Lever T Brake Ass'y ❷ with spring brake ❸.

Note : Take extreme care not to be folded and transformed Spring Brake at removing or reinstalling.

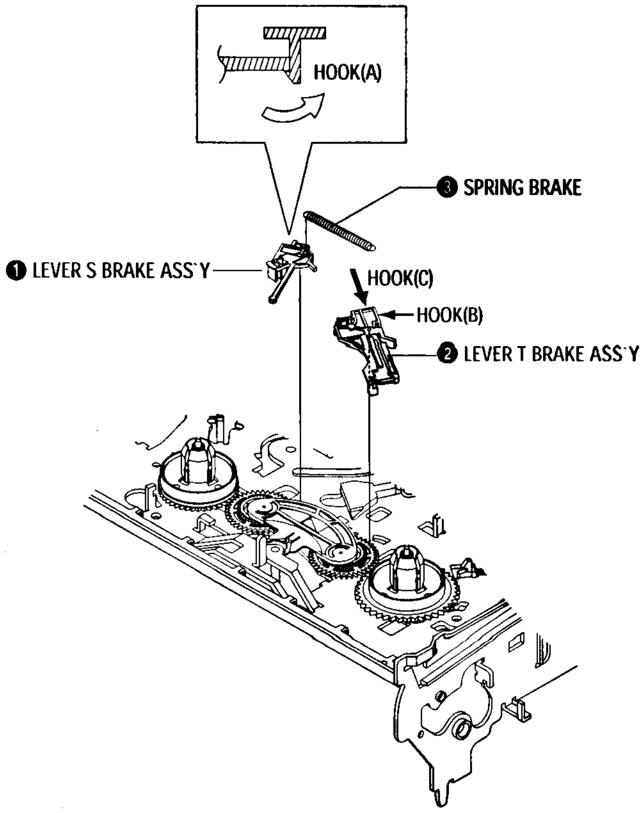

HOOK(A)
❸ SPRING BRAKE
❶ LEVER S BRAKE ASS'Y
HOOK(C)
HOOK(B)
❷ LEVER T BRAKE ASS'Y

Fig. 1-17 Lever Brake S, T Ass'y Removal

1-2-13 Gear Idle Ass'y Removal

1) Push the **Lever Idle** ❶ **in the direction of arrow** "A", "B".
2) **Lift the Lever** Idle ❶.

Assembly :
1) Apply oil in two Bosses of Lever Idle ❶.
2) Assemble the Gear Idle ❷ with the Lever Idle ❶.

Note : When replacing the Gear Idle ❷, **be sure to** add oil in the boss of Lever Idle ❶.

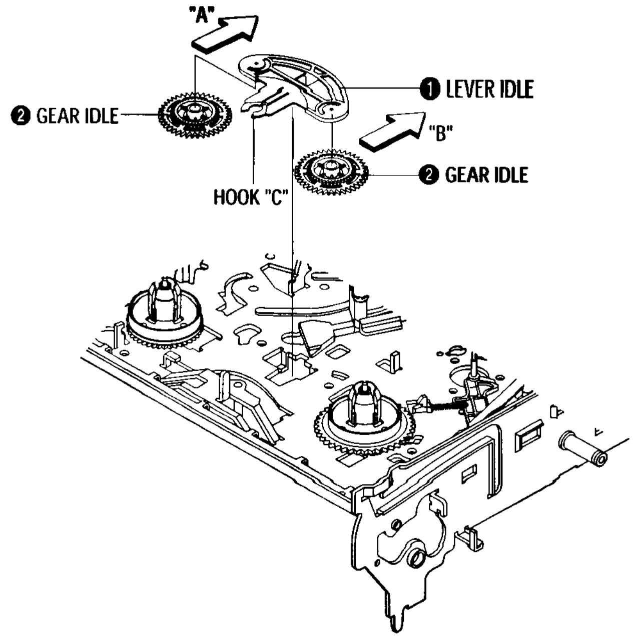

"A"
❶ LEVER IDLE
❷ GEAR IDLE
"B"
❷ GEAR IDLE
HOOK "C"

Fig. 1-18 Gear Idle Ass'y Removal

1-2-14 Disk S, T Reel Removal

1) **Lift the** Disk S, T Reel ❶, ❷.

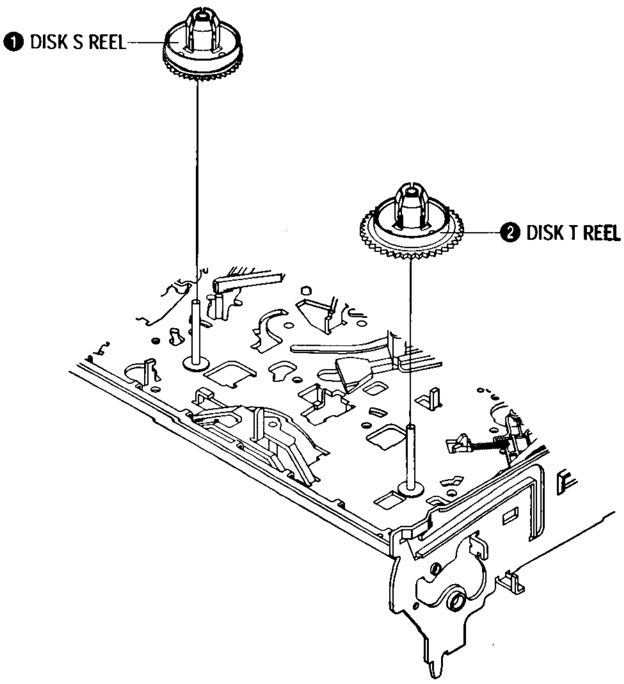

❶ DISK S REEL
❷ DISK T REEL

Fig. 1-19 Disk S, T Reel Removal

1-2-15 Holder Clutch Ass'y Removal

1) Remove the Washer Slit ❶.
2) Lift the Holder Clutch Ass'y ❷.

Note : When you reinstall Holder Clutch Ass'y
1) Check the condition of spring as shown in detail A.
2) Don't push Holder Clutch Ass'y down with excessive force Just insert Holder Clutch Ass'y into post center with dead force and Rotate it smoothly.
Be sure to confirm that spring is in the slit of Gear Center Ass'y as shown in detail B.

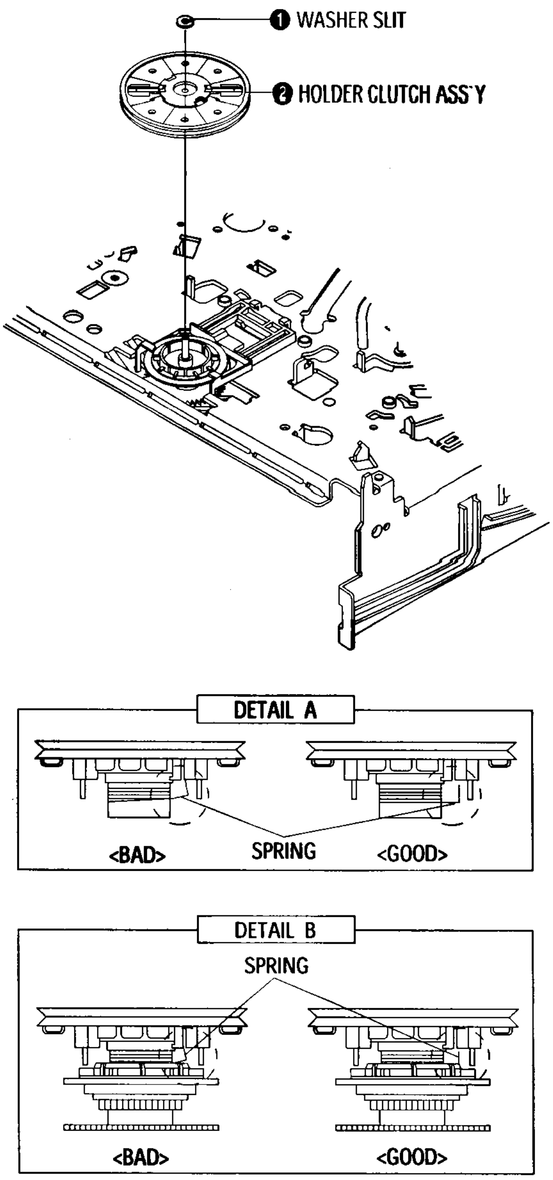

❶ WASHER SLIT
❷ HOLDER CLUTCH ASS'Y
DETAIL A
<BAD>
SPRING
<GOOD>
DETAIL B
SPRING
<BAD>
<GOOD>

Fig. 1-20 Holder Clutch Ass'y Removal

1-2-16 Lever Up Down Ass'y, Gear Center Ass'y Removal

1) Remove the 2 hooks in the direction of arrow as shown Fig. 1-21 and lift the Lever Up Down Ass'y ❶.
2) Lift the Gear Center Ass'y ❷.

Assembly :
1) Insert the Lever Up Down Ass'y ❶ in the rectangular holes on Main Base as shown in Fig 1-22.
2) Lift the Lever Up Down Ass'y ❶ about 35 degree.(Refer to Fig 1-22)
3) Insert Ring of the Gear Center Ass'y ❷ in the Guide of the Lever Up Down Ass'y ❶.
4) Insert the Gear Center Ass'y ❷ in the post on Main Base.
5) Push down the Lever Up Down Ass'y ❶ for locking of the Hook.

Note :
1) Take care not to separate and sentence does not mark sense.
2) Be sure to confirm that Ring of the Gear Center Ass'y ❷ is in the Guide of the Lever Up Down Ass'y ❶ after finishing assembly of Lever Up

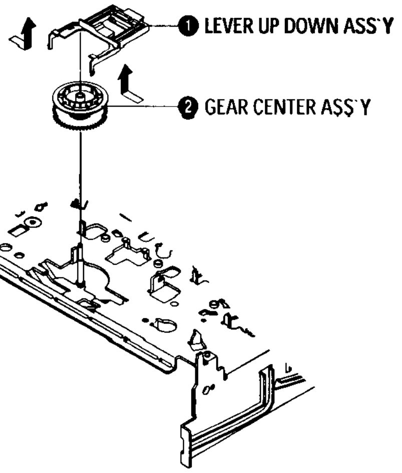

❶ LEVER UP DOWN ASS'Y
❷ GEAR CENTER ASS'Y

Fig. 1-21 Lever Up Down Ass'y Removal

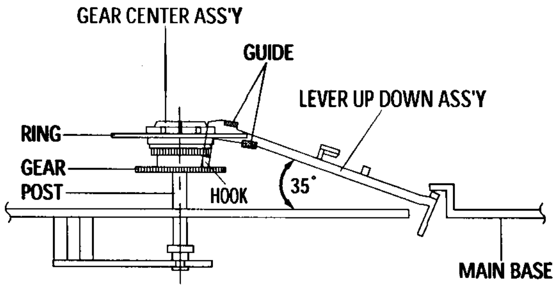

GEAR CENTER ASS'Y
GUIDE
LEVER UP DOWN ASS'Y
RING
GEAR
POST
HOOK
35°
MAIN BASE

Fig. 1-22 Lever Up Down Ass'y Removal

1-2-17 Guide Cassette Door Removal

1) Lift the Hook [A].
2) Rotate the Guide Cassette Door ❶ in the direction of arrow.

Note : After reinstalling the Guide Cassette Door ❶ sure the Hook [A].

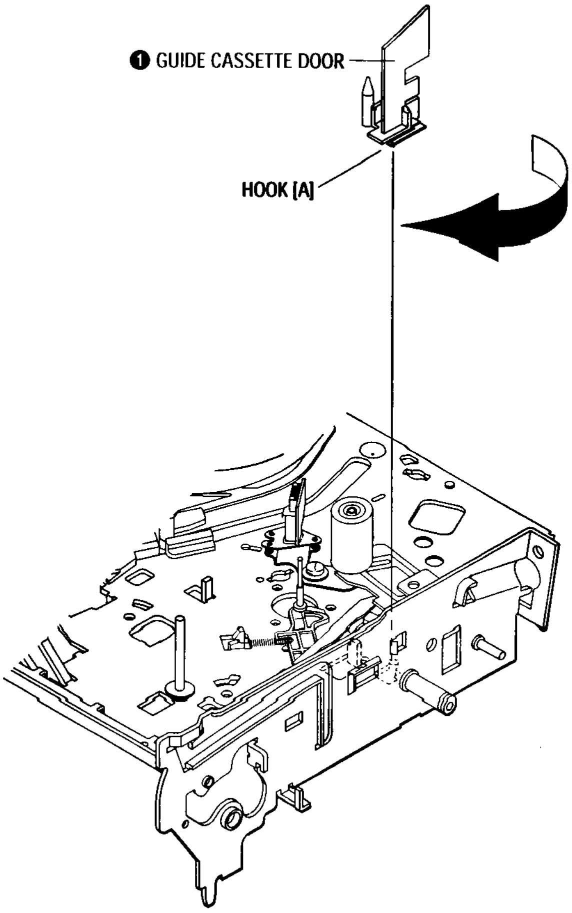

❶ GUIDE CASSETTE DOOR
HOOK [A]

Fig. 1-23 Guide Cassette Door Removal

1-2-18 Lever Unit Pinch Ass'y, Plate Joint, Spring Pinch Drive Removal

1) Lift the Unit Pinch Ass'y ❶.
2) Remove the Plate Joint ❷ from Lever Pinch Drive.
3) Remove the Spring Pinch Drive ❸.

Note :

1) Take extreme care not to touch the grease on the Roller Pinch.
2) When reinstalling, be sure to apply grease on the post pinch roller.

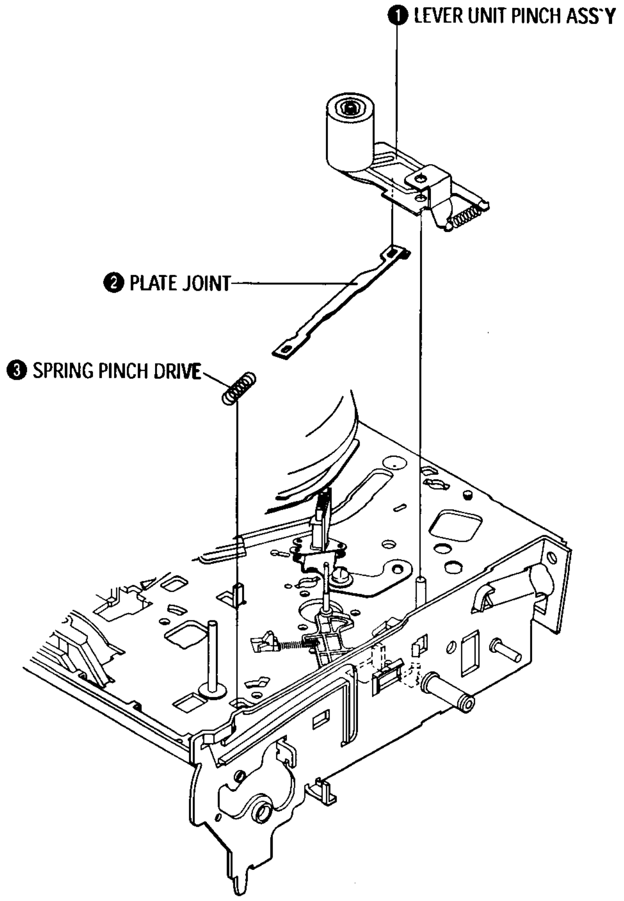

❶ LEVER UNIT PINCH ASS'Y
❷ PLATE JOINT
❸ SPRING PINCH DRIVE

Fig. 1-24 Lever Unit Pinch Ass'y, Plate Joint, Spring Pinch Drive Removal

1-2-19 Lever #9 Guide Ass'y Removal

1) Remove the Spring #9 Guide ❶.
2) Lift the Spring #9 Guide Ass'y ❷ in the direction of arrow "A".

Note :
1) Take extreme care not to get grease on the tape Guide Post.
2) After reinstalling, check the bottom side of the Post #9 Guide to the top side of Main Base.

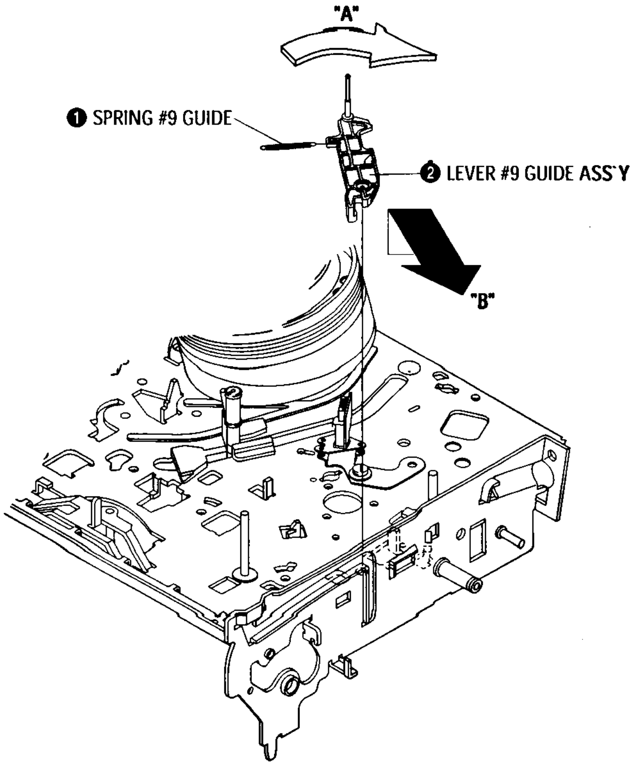

"A"
❶ SPRING #9 GUIDE
❷ LEVER #9 GUIDE ASS'Y
"B"

Fig. 1-25 Lever #9 Guide Ass'y Removal

1-2-20 FE Head Removal

1) Remove the screw ❶.
2) Lift the FE Head ❷.

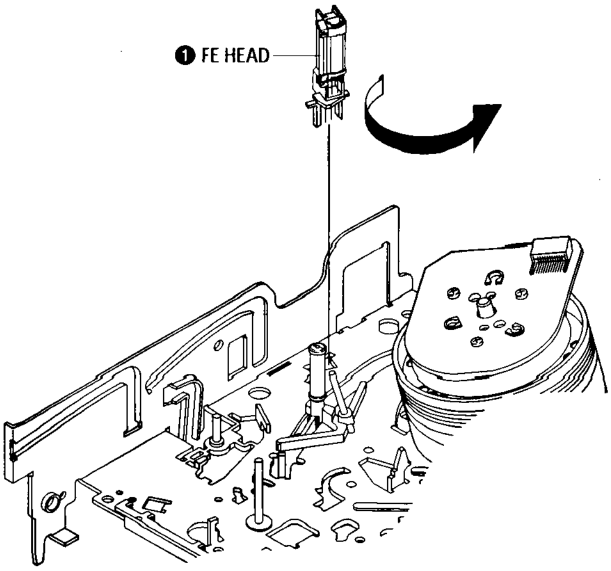


Fig. 1-26 FE Head Removal

1-2-21 ACE Head Removal

1) Pull out the FPC from connector of ACE Head Ass'y ❷.
2) Remove the screw ❶.
3) Lift the ACE Head Ass'y ❷.

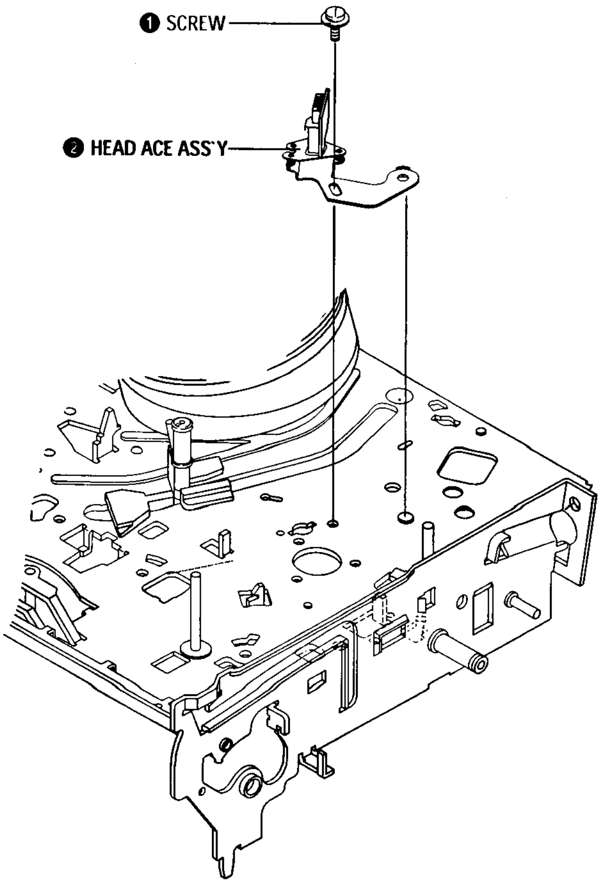

❶ SCREW
❷ HEAD ACE ASS'Y

Fig. 1-27 ACE Head Removal

1-2-22 Slider S, T Ass'y Removal

1) Move the Slider S, T Ass'y ❶, ❷ to slot, and then lift it to remove. (Refer to arrow)

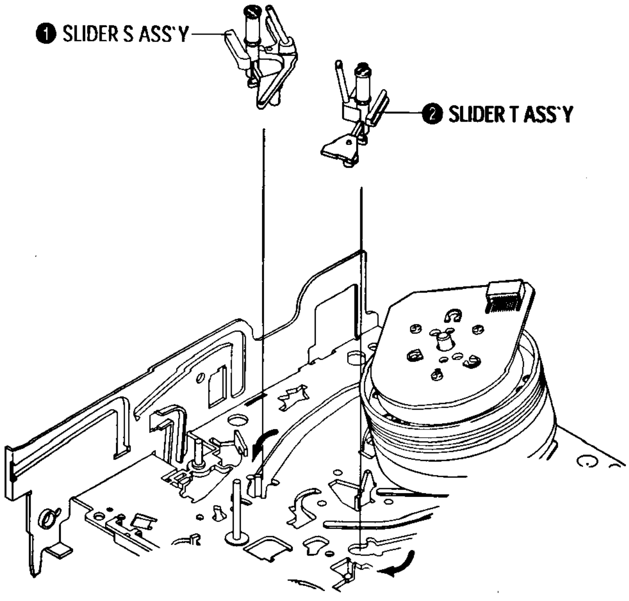

❶ SLIDER S ASS'Y
❷ SLIDER T ASS'Y

Fig. 1-28 Slider S, T Ass'y Removal

1-2-23 Plate Ground Deck, Cylinder Ass'y Removal

1) Remove the 3 Screws ❶.
2) Lift the Plate Ground Deck ❷.
3) Lift the Cylinder Ass'y ❸.

Assembly :

1) Match the 3 holes in the bottom of Cylinder ass'y ❸ to the 3 holes of Main Base as attending not to drop or knock the Cylinder ass'y ❸.
2) Tighten the 1 Screw ❶.
3) Match the Plate Ground Deck ❷ to the Hole of Base Main.
4) Tighten the other 2 Screws ❶.

Note :

1) Take care not to touch the Cylinder Ass'y ❸ and the tape guide post at reinstalling.
2) When reinstalling, Don't push down too much on Screw Driver.

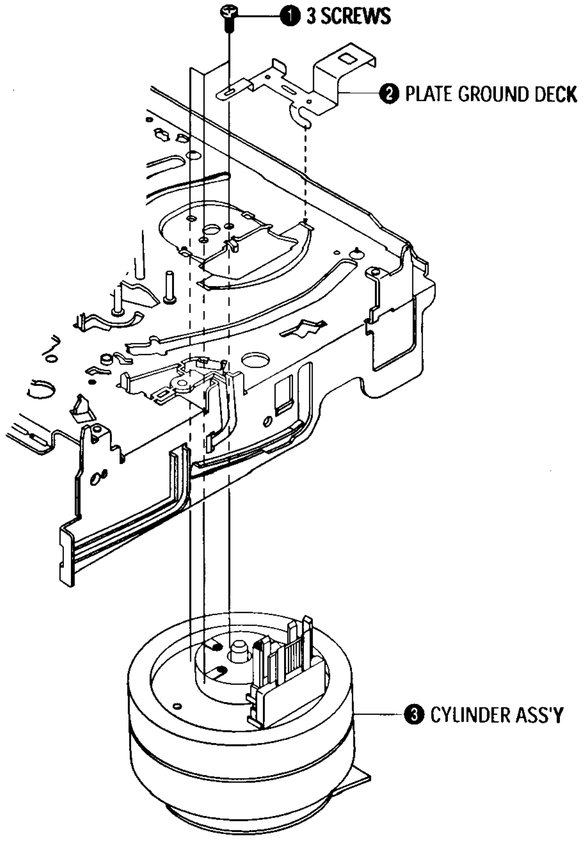

❶ 3 SCREWS
❷ PLATE GROUND DECK
❸ CYLINDER ASS'Y

Fig. 1-29 Plate Ground Deck, Cylinder Ass'y Removal

1-2-24 Belt Pulley Removal

1) Remove the Belt Pulley ❶.

Note : Take extreme care not to get grease on Belt Pulley ❶ at assembling or reassembling.

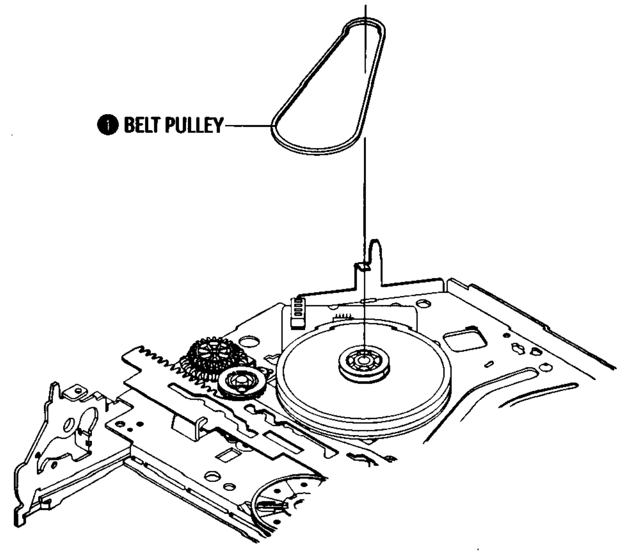

❶ BELT PULLEY

Fig. 1-30 Belt Pulley Removal

1-2-25 Level Head Cleaner Ass'y Removal

1) Release the Hook ❶.
2) Lift the Lever Head Cleaner Ass'y ❷.

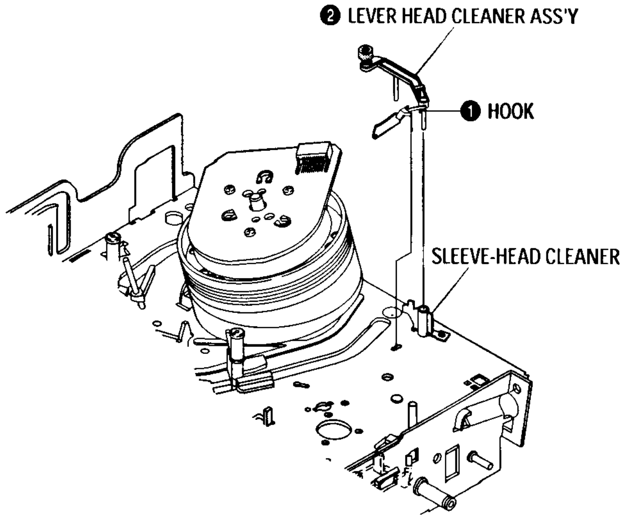

❷ LEVER HEAD CLEANER ASS'Y
❶ HOOK
SLEEVE-HEAD CLEANER

Fig. 1-31 Level Head Cleaner Ass'y Removal

1-2-26 Damper Capstan, Motor Capstan Ass'y Removal

1) Remove the Damper Capstan ❶ in the direction of arrow.
2) Remove the 3 Screws ❷.
3) Remove the Motor Capstan Ass'y ❸.

Assembly :
1) Match the 3 holes of Motor Capstan Ass'y ❸ to the 3 holes of Main Base. Be careful not to drop or knock the Motor Capstan Ass'y ❸.
2) Tighten the 3 Screws ❷ in the direction of arrow as shown detail drawing.
3) Assemble the Damper Capstan ❶.

Note : After tightening screws, check if there is gap between the head of screws and the top side of Main Base. There should have no gap between the head of screws and the top side of Main Base.
After reinstalling, adjusting the tape transport system again.

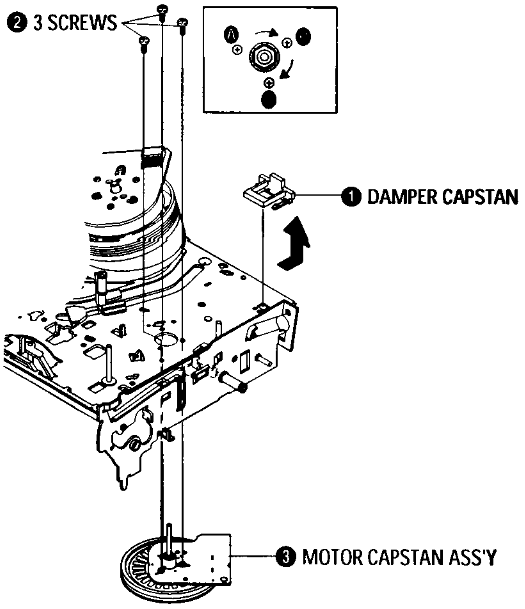


Fig. 1-32 Damper Capstan,Motor Capstan Ass'y Removal

1-2-27 How to Eject the Cassette Tape
(If the unit does not operate on condition that is inserted into housing ass'y)

1) Turn the Gear worm ❶ clockwise with screw driver. (Refer to arrow)
(Other method : Remove the Screw of Motor Load Ass'y, Separate the Motor Load Ass'y)

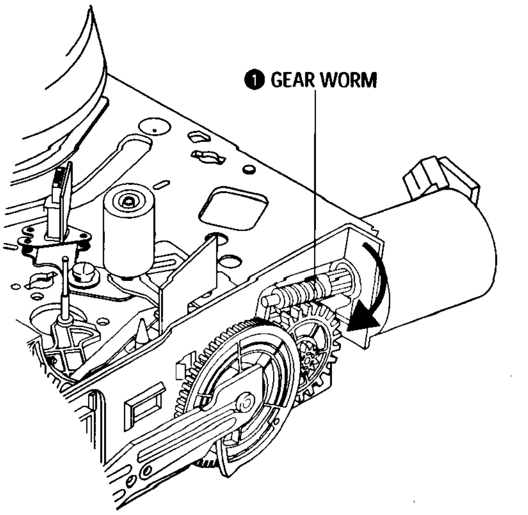


Fig. 1-33

2) When Slider S,T are approched in the position of unloading, rotate holder Clutch counterclockwise after inserting screw driver in the hole of frame's bottom in order to wind the unwinded tape. (Refer to Fig.1-34)
(If you rotate Gear Worm ❶ continuously when tape is in state of unwinding, you may cause a tape contamination by grease and tape damage. Be sure to wind the unwinded tape in the state of set horizently.)
3) Rotate Gear Worm ❶ clockwise using screw driver again up to the state of eject mode and then pick out the tape.(Refer to Fig.1-33)

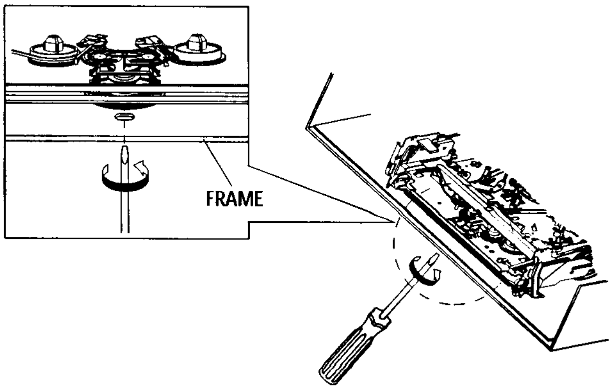


Fig. 1-34

1-3 The table of clearing, Lubrication and replacement time about principal parts

1) The replacement time of parts is not life of parts.
2) The table 1-1 is that the VCR Set is in normal condition (normal temperature, normal humidity).
The checking period may be changed owing to the condition of use, runtime and environmental conditions.
3) Life of the Cylinder Ass'y is depend on the condition of use.
4) See exploded view for location of each parts.

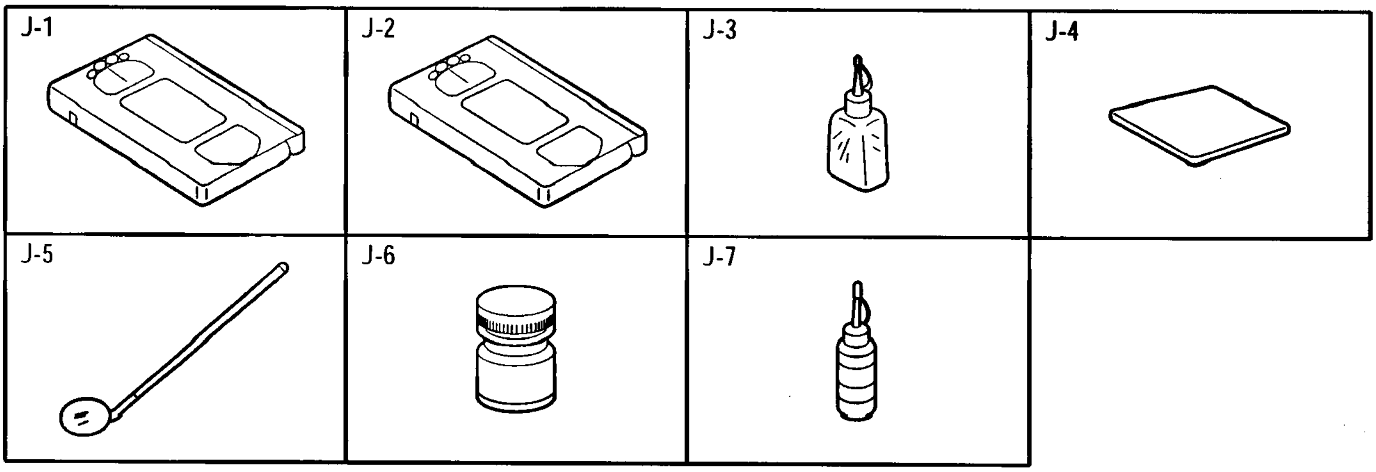
<Table 1-1>

*	Parts Name	Checking Period										Remark
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
TAPE PATH SYSTEM	POST TENSION	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	- To clean the parts, use patch and alcohol (solvent). - After cleaning, use the video tape after alcohol is gone away completely. - We recommend to use oil [NT-68] or solvent. - One or two drops of oil should be applied after cleaning with alcohol.
	SLANT POST S, T	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	#8 GUIDE SHAFT	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	CAPSTAN SHAFT	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	#9 GUIDE POST	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	#3 GUIDE POST	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	GUIDE ROLLER S, T	Δ	Δ	Δ	0	0	0	0	0	0	0	
	CYLINDER ASS'Y	Δ	0	0	0	0	0	0	0	0	0	
	FE HEAD	Δ	Δ	Δ	0	0	0	0	0	0	0	
	ACE HEAD	Δ	0	0	0	0	0	0	0	0	0	
	PINCH ROLLER	Δ	0	0	0	0	0	0	0	0	0	
	POST REEL S, T		◆		◆		◆		◆		◆	- Periodic time of applying oil (Apply oil after cleaning) - The excessive applying oil may be the cause of malfunction.
	SLEEVE TENSION		◆		◆		◆		◆		◆	
	POST CENTER		◆		◆		◆		◆		◆	
	LEVER IDLE BOSS (2Point)		◆		◆		◆		◆		◆	
DRIVING SYSTEM	CAPSTAN MOTOR PULLEY	Δ	Δ	Δ	Δ	Δ	0	0	0	0	0	
	BELT PULLEY				0	0	0	0	0	0	0	
	HOLDER CLUTCH ASS'Y	Δ	0	0	0	0	0	0	0	0	0	
	GEAR CENTER ASS'Y		0	0	0	0	0	0	0	0	0	
	GEAR IDLE (2Point)		0	0	0	0	0	0	0	0	0	
	LOADING MOTOR		0	0	0	0	0	0	0	0	0	
BRAKE SYSTEM	BAND BRAKE ASS'Y		0	0	0	0	0	0	0	0	0	
	BRAKE T ASS'Y		0	0	0	0	0	0	0	0	0	

Δ : Cleaning O : Check and replacement in necessary ◆ : Add Oil

1-4 Tools and fixtures reguired for service

Ref. No.	Name		Part No.	Caved Jig No.	Remarks
J-1	Torque Measurement Cassette VHT-103S		J-6090-072-A		For FWD & back tension torque measurement
	Torque Measurement Cassette VHT-404S		J-6082-012-A		For CUE and REVIEW torque measurement
J-2	Alignment Tape	KRV-52NE (NTSC)	8-192-605-41		Tape path, Audio azimuth, X-value adjustments
		KRV-51N2 (NTSC)	8-192-605-32		Electrical adjustments, Operation check
		KRV-52PL (PAL)	8-192-605-46		Tape path, Audio azimuth, X-value adjustments
		KRV-51P (PAL)	8-192-605-36		Electrical adjustments, Operation check
J-3	Cleaning Fluid		Y-2031-001-0	—	
J-4	Chamois Leather		2-034-697-00	—	
J-5	Dental Mirror (with Handle)		J-6080-029-A	SL-5052	Tape path and tape traveling adjustments or checks
	Dental Mirror (Mirror)		J-6080-030-1		
J-6	Grease Molykote EM 30LG		J-6090-014-A		Net. 20 g
J-6	Diamond Oil NT-68		7-661-018-18		



<Fig 1-35>

2. Alignment and Adjustment

2-1 Tape Transport System and Adjustment Locations

The tape transport system has been adjusted precisely in the factory. Alignment is not necessary except for the following :

1) Noise observed on the screen.
2) Tape damage.
3) Parts replacement in the tape transport system.

Lower flange height of tape guide is used as the reference for the transport adjustment.
To maintain the height of the tape guide and prevent damage, do not apply excessive force onto the main base.

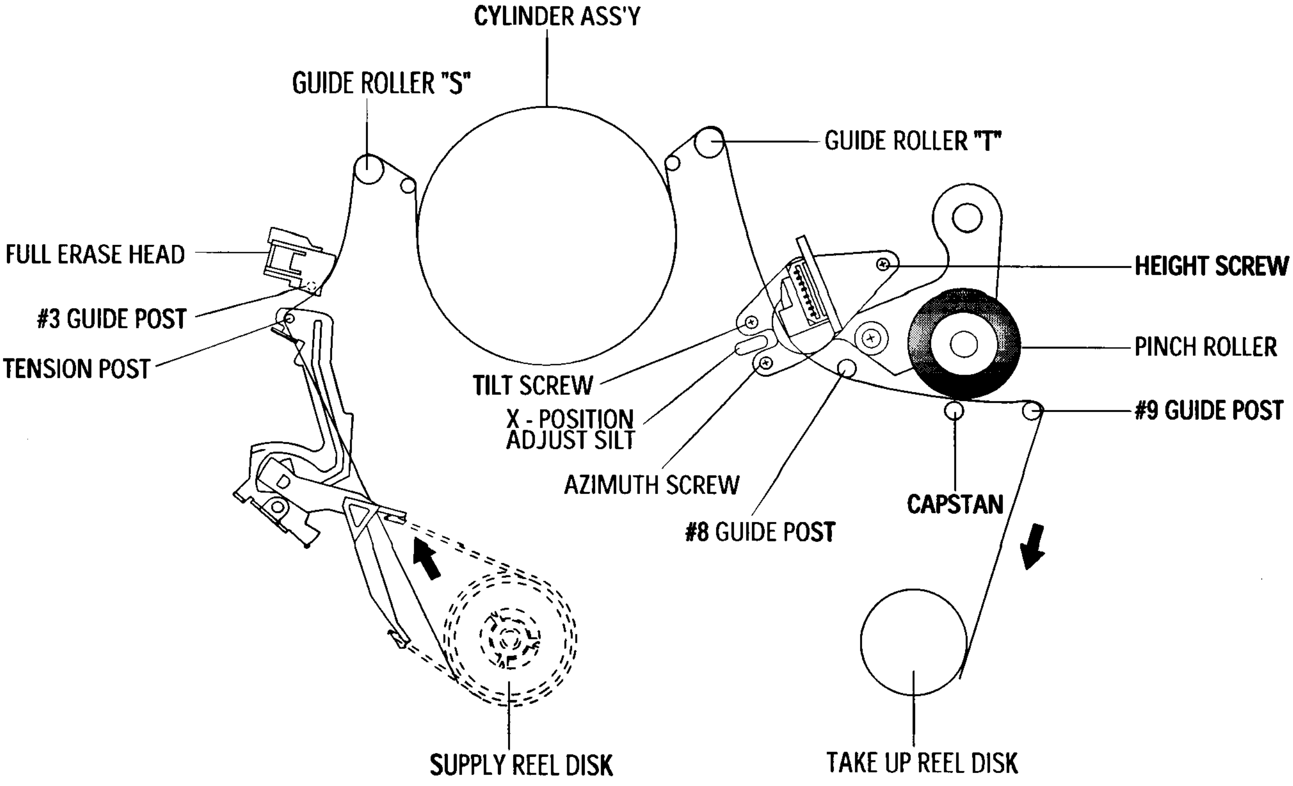

CYLINDER ASS'Y
GUIDE ROLLER "S"
GUIDE ROLLER "T"
FULL ERASE HEAD
HEIGHT SCREW
#3 GUIDE POST
PINCH ROLLER
TENSION POST
TILT SCREW
#9 GUIDE POST
X - POSITION ADJUST SILT
AZIMUTH SCREW
CAPSTAN
#8 GUIDE POST
SUPPLY REEL DISK
TAKE UP REEL DISK

Fig. 2-1 Location of Tape Transport Adjustment

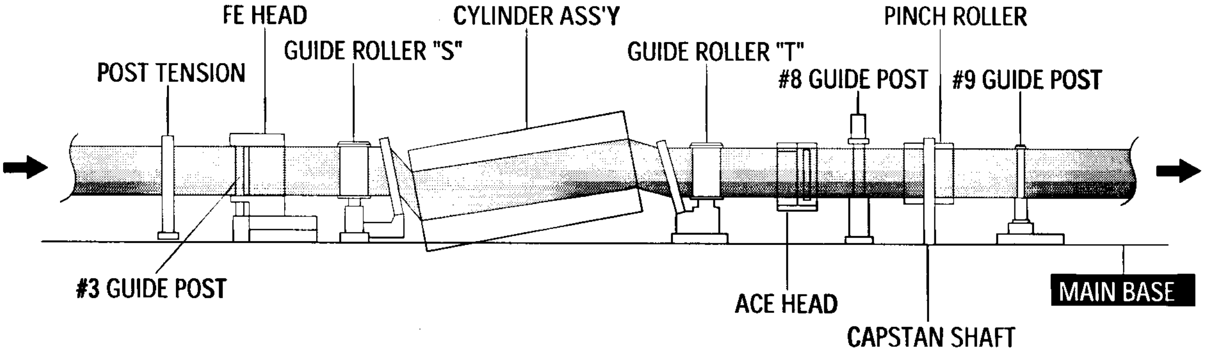

FE HEAD
CYLINDER ASS'Y
PINCH ROLLER
GUIDE ROLLER "S"
GUIDE ROLLER "T"
POST TENSION
#8 GUIDE POST
#9 GUIDE POST
#3 GUIDE POST
ACE HEAD
MAIN BASE
CAPSTAN SHAFT

Fig. 2-2 Tape Travel Diagram

2-2 Tape Transport System Adjustment

When parts are replaced, perform the required adjustments by referring to procedures for the tape transport system. If there are any changes to the tape path, first run a T-120 tape and make sure excessive tape wrinkle does not occur at the tape guides.

1) If tape wrinkle is observed at the guide roller S, T, turn the guide roller S, T until wrinkle disappears.
2) If the tape wrinkle is still observed at the tape guide, perform the tilt adjustment of the ACE head. (See page 5-3 of the Service Manual for Test Point Locations.)

2-2-1 ACE Head Assembly Adjustment

2-2-1(a) ACE HEAD HEIGHT ADJUSTMENT

1) Run the alignment tape (KRV-52NE (NTSC)/52PL (PAL)) in the playback mode.
2) Observe surface of the audio head using a dental mirror.
3) Turn screw (C) clockwise or counterclockwise until the gap of lower tape edge and the lower edge of the control head is about 0.25mm. (Refer to Fig. 2-3 and 2-4)

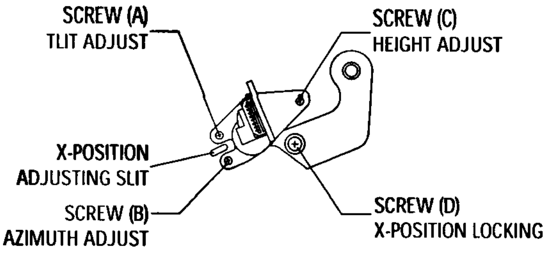


Fig. 2-3 Location of ACE Head Adjustment Screw

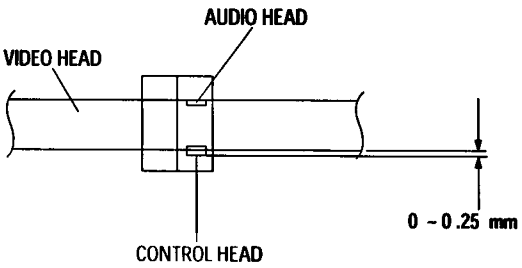


Fig. 2-4 ACE Head Height Adjustment

2-2-1(b) ACE HEAD TILT ADJUSTMENT

1) Playback a blank tape and observe the position of the tape at the lower flange of tape guide.
2) Confirm that there is no curl or wrinkle at the lower flange of tape guide as shown in Fig. 2-5 (B).
3) If a curl or wrinkle of the tape occurs, slightly turn the screw (A) tilt adjust on the ACE head ass'y.
4) Reconfirm the ACE head height.

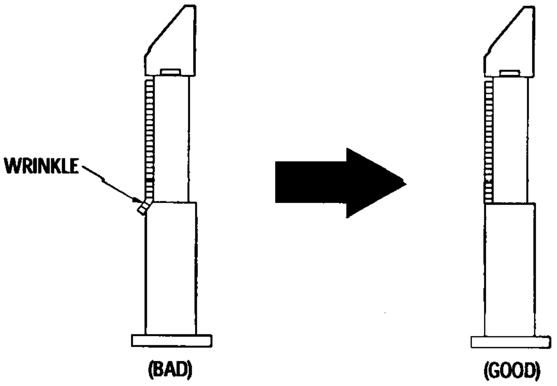


Fig. 2-5 Tape Guide Check

2-2-1(c) AUDIO AZIMUTH ADJUSTMENT

1) Load alignment tape (KRV-52NE (NTSC)/52PL (PAL)) and playback the NTSC : 5KHz (PAL : 4KHz) signal.
2) Connect channel-1 scope probe to audio output test point.
3) Adjust screw (B) to achieve maximum audio level. (See Fig. 2-3)

2-2-1(d) ACE HEAD POSITION (X-POINT) ADJUSTMENT

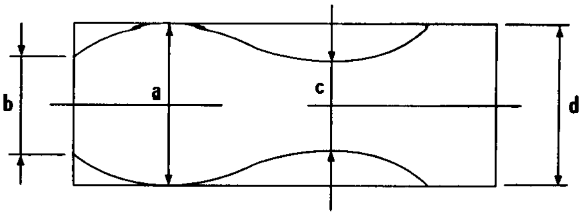
1) See "2. Alignment and Adjustment" for ACE Head position (X-Point) adjustment.

2-2-2 Linearity Adjustment (Guide roller S, T adjustment)

1) Playback the alignment tape (KRV-51N2 (NTSC)/51P (PAL)) (SP mode, Mono Scope).
2) Observe the video envelope signal on an oscilloscope (triggered by the video switching pulse).
3) Make sure the video envelope waveform (at its minimum) meets the specification shown in Fig. 2-6.
   If it does not, adjust as follows :

Note :
a=Maximum output of the video RF envelope.
b=Minimum output of the video RF envelope at the entrance side.
c=Minimum output of the video RF envelope at the center point.
d=Maximum output of the video RF envelope at the exit side.

4) If the section A in Fig. 2-7 does not meet the specification, adjust the guide roller S up or down.
5) If the section B in Fig. 2-7 does not meet the specification, adjust the guide roller T up or down.



a b c d
c,b,d/a ≧63%

Fig. 2-6 Envelope Waveform Adjustment

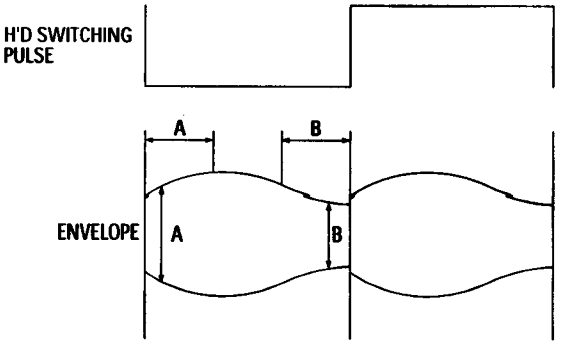

H'D SWITCHING PULSE
A
B
ENVELOPE
A
B

Fig. 2-7 Adjustment Points

6) Play back the alignment tape (SP mode, Mono Scope).
7) Connect an oscilloscope CH-1 to the Envelope and CH-2 to the H'D SW Pulse for triggering.
8) Turn the guide roller heads with a flat head (▬) driver to obtain a flat video RF envelope as shown in Fig. 2-8.

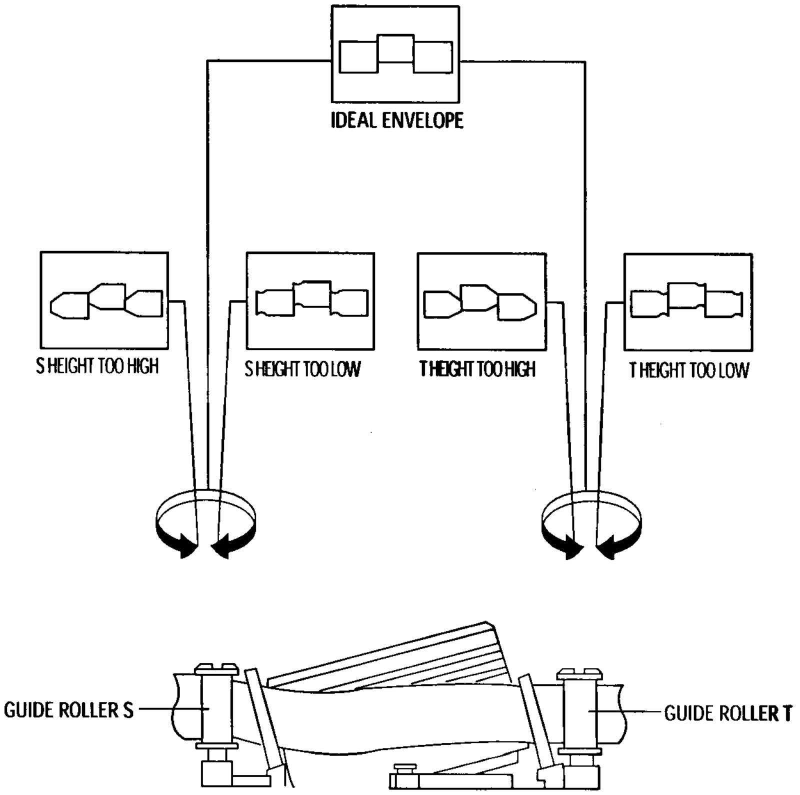

IDEAL ENVELOPE
S HEIGHT TOO HIGH
S HEIGHT TOO LOW
T HEIGHT TOO HIGH
T HEIGHT TOO LOW
GUIDE ROLLER S
GUIDE ROLLER T

Fig. 2-8 Guide Roller S, T Height Adjustment

2-2-3 Check Transitional Operation from RPS to Play

Check transition from RPS mode to play mode : Using a pre-recorded SP tape, make sure the entry side of envelope comes to an appropriate steady state within 3 seconds (as shown in Fig. 2-9).
If the envelope waveform does not reach specified peak-to peak amplitude within 3 seconds, adjust as follows :

1) Make sure there is no gap between the supply roller lower flange and the tape.
   If there is a gap, adjust the supply guide roller again.
2) Change operation mode from the RPS to the play mode (again) and make sure the entry side of envelope rises within 3 second.

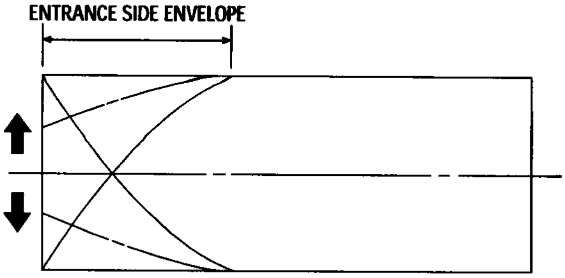


Fig. 2-9 Video Envelope Rising when Operation mode Changes from RPS to Play Mode

2-2-4 Envelope Check

1) Make recordings on T-120 (E-120) and T-160 (E-180) tape.
   Make sure the playback output envelope meets the specification as shown in Fig. 2-10.
2) Play back a self recorded tape (recording made on the unit using with T-120 (E-120).
   The video envelope should meet the specification as shown in Fig. 2-10.
   In SP mode, (A) should equal (B).
   If the head gap is wide, upper cylinder should be checked.

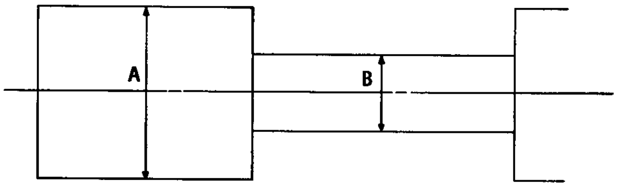


Fig. 2-10 Envelope Output and Output Level

2-2-5 Tape Wrinkle Check

1) Run the T-160 (E-180) tape in the playback, FPS, RPS and Pause modes and observe tape wrinkle at each guide.
2) If excessive tape wrinkle is observed, perform the following adjustments in Playback mode :

- Tape wrinkle at the guide roller S, T section :
  Linearity adjustment.
- Tape wrinkle at tape guide flange :
  ACE head assembly coarse adjustment.

2-3 Reel Torque

1) The rotation of the capstan motor causes the Holder Clutch Ass'y to rotate through the Belt Pulley.
2) The spring wrap PLAY/REV of holder clutch ass'y drives the disk reel S, T through gear idle by rotation of gear center ass'y.
3) Brake is operated by slider cam at FF/REW mode.
4) Transportation of accurate driving force is done by gears. (Gear Center Ass'y)

Note : If the spec. does not meet the followings specifications, replace the holder clutch ass'y and then recheck.

<Table 2-1>

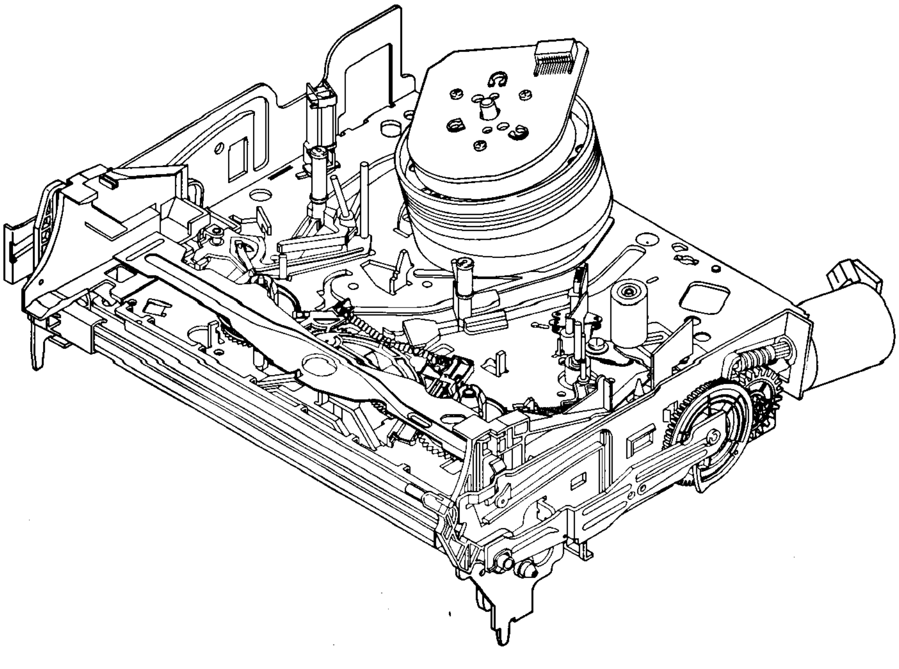
MODE	TORQUE g/cm	GAUGE
PB	42 ± 11	Cassette Torquemeter
RPS	145 ± 30	Cassette Torquemeter

VIDE-V28112

VHS MECHANICAL ADJUSTMENT MANUAL VII

TS-10 MECHANISM

Please use this manual with the service manual.



VHS MECHANISM DECK

SONY®

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1. Disassembly and Reassembly

1-1 Deck Parts Locations

1-1-1 Top View

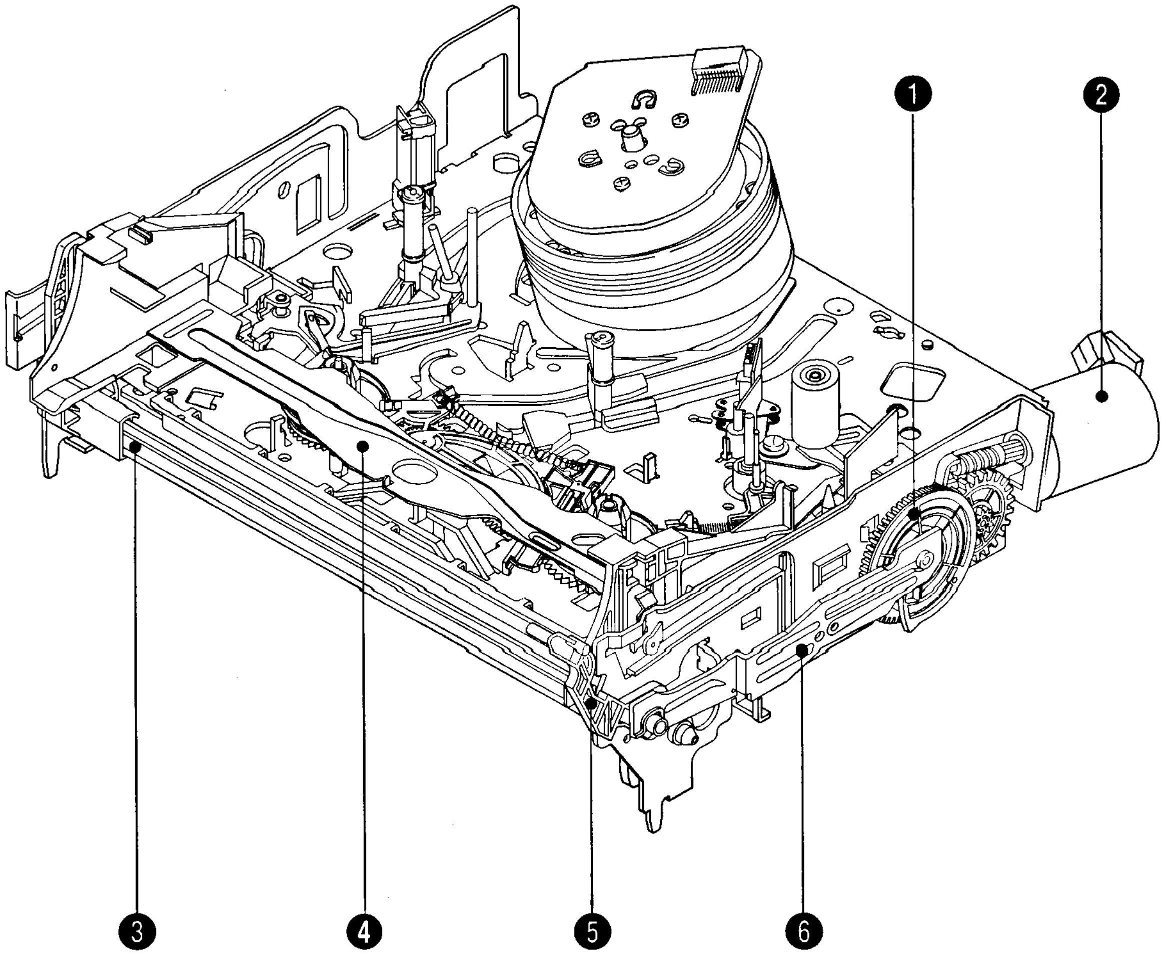


Fig. 1-1 Top parts Location-1

❶ GEAR FL CAM
❷ MOTOR LOADING ASS'Y
❸ LEVER FL ARM ASS'Y
❹ HOLDER FL CASSETTE ASS'Y
❺ LEVER FL DOOR
❻ SLIDER FL DRIVE

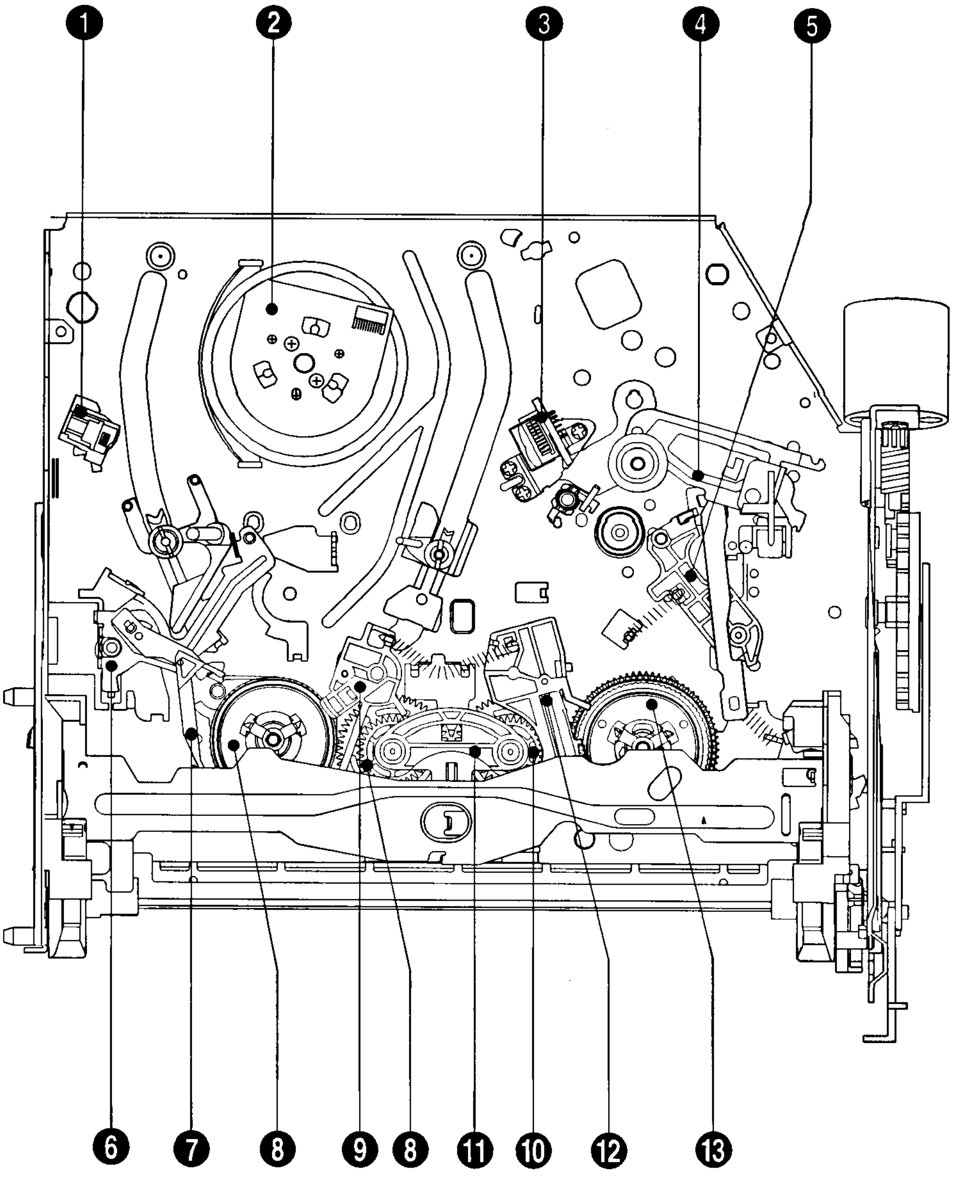


Fig. 1-2 Top Parts Location-2

❶ FE HEAD
❷ CYLINDER ASS'Y
❸ ACE HEAD ASS'Y
❹ LEVER UNIT PINCH ASS'Y
❺ LEVER #9 GUIDE ASS'Y
❻ LEVER TENSION ASS'Y
❼ BAND BRAKE ASS'Y
❽ DISK S REEL
❾ LEVER S BRAKE ASS'Y
❿ GEAR IDLE
⓫ LEVER IDLE
⓬ LEVER T BRAKE ASS'Y
⓭ DISK T REEL

1-1-2 Bottom View

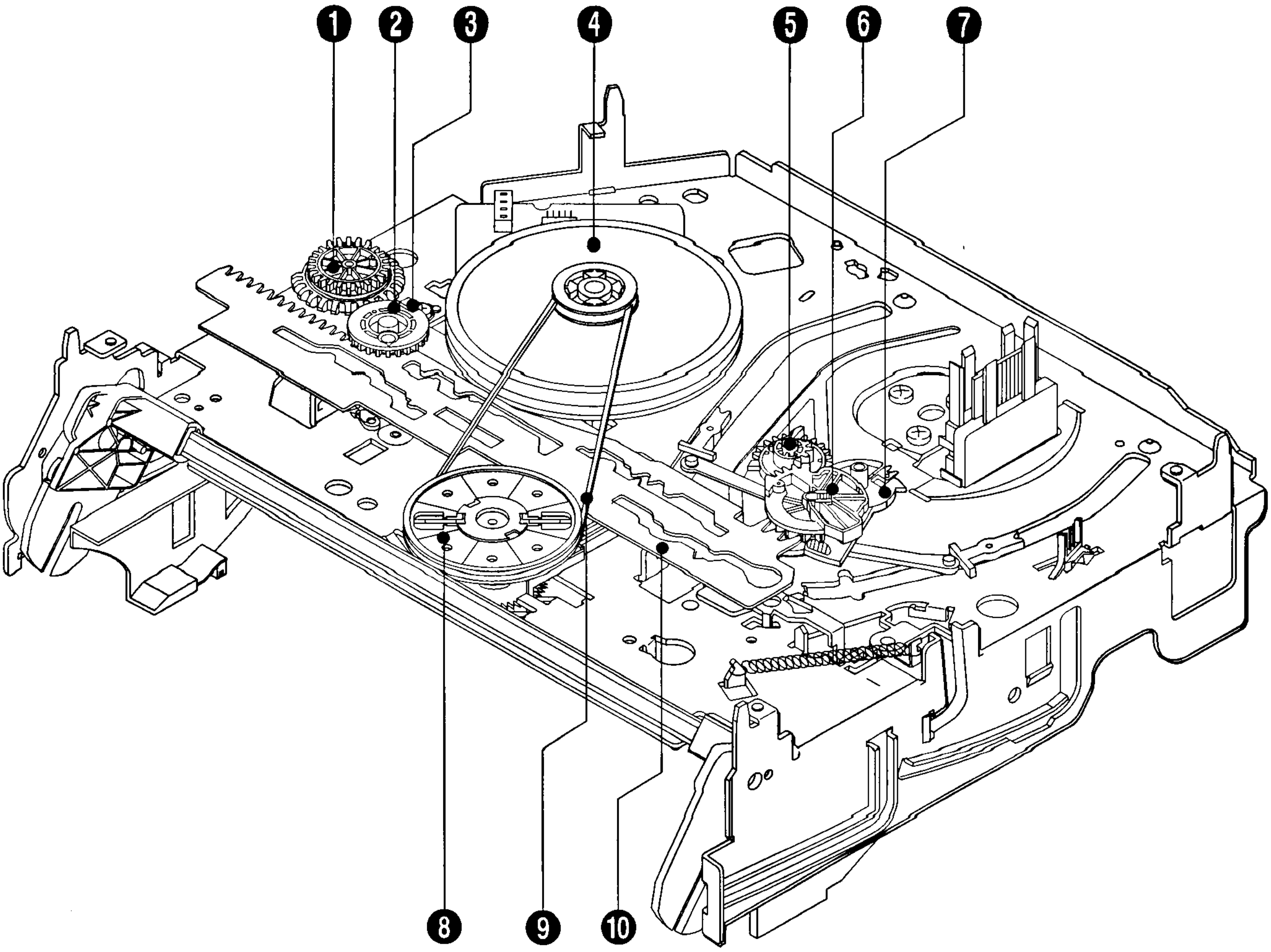


Fig. 1-3 Bottom Parts Location

❶ GEAR JOINT 1
❷ GEAR JOINT 2
❸ BRACKET GEAR
❹ MOTOR CAPSTAN ASS'Y
❺ LEVER T LOAD ASS'Y
❻ GEAR LOADING DRIVE
❼ LEVER S LOAD ASS'Y
❽ HOLDER CLUTCH ASS'Y
❾ BELT PULLEY
❿ SLIDER CAM

1-2 Main Deck

1-2-1 Lever FL Door Removal

1) Push the Holder FL Cassette Ass'y ❶ about 20mm in the direction of arrow "A".
2) Rotate the **Lever FL Door** ❷ in the direction of arrow "B".
3) Release the Hook ❸ and Remove the Lever FL Door ❷ in the direction of arrow "C".

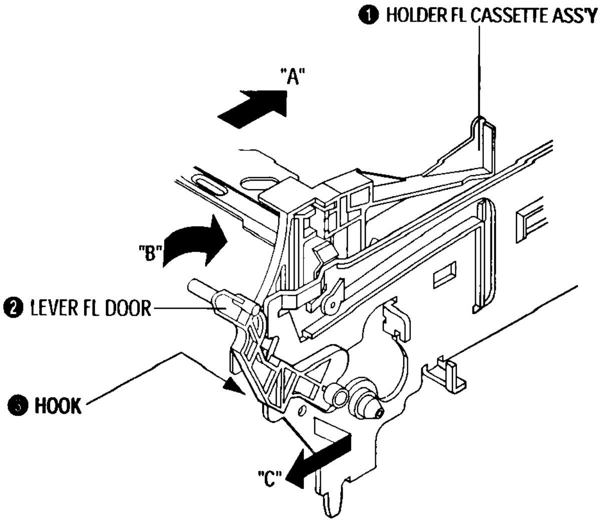

❶ HOLDER FL CASSETTE ASS'Y
"A"
"B"
❷ LEVER FL DOOR
❸ HOOK
"C"

Fig. 1-4 Lever FL Door Removal

1-2-2 Holder FL Cassette Ass'y Removal

1) **Pull the** Holder FL Cassette Ass'y ❶ to the eject position.
2) Pull the Holder FL Cassette Ass'y ❶ as grasping the Holder FL Cassette Ass'y ❶ and Lever FL Cassette-R ❷ in the same time to release hooking from Main Base until the Boss [A] of Holder FL Cassette Ass'y ❶ is taken out from the Rail [B].
3) Lift the Holder FL Cassette Ass'y ❶, in this time, you have to grasp the Lever FL Cassette-R ❷ Continuously until the Holder FL Cassette Ass'y ❶ is taken out completely.

Note : Be sure to insert Lever FL Cassette-R ❷ in the direction of "A" to prevent separation and breakage of the Lever FL Cassette-R ❷ at disassembling and reassembling.

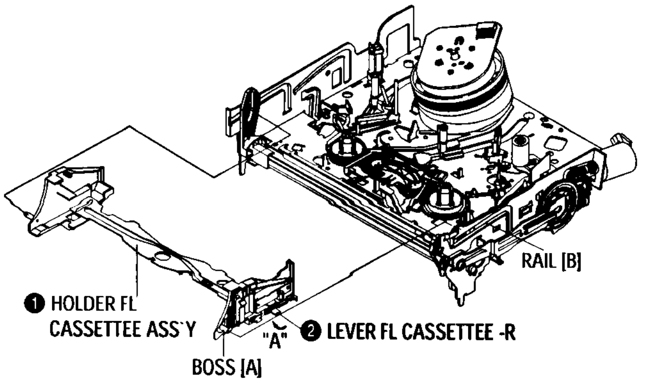

RAIL [B]
❶ HOLDER FL CASSETTEE ASS'Y
"A"
❷ LEVER FL CASSETTEE -R
BOSS [A]

Fig. 1-5 Holder FL Cassette Ass'y Removal

1-2-3 Slider FL Drive, Gear FL Cam Removal

1) Pull the Slider FL Drive ❶ to the front direction.
2) Remove the Slider FL Drive ❶ in the direction of arrow. (Refer to Fig. 1-6)
3) Remove the Gear FL cam ❷.

Note : When reinstalling be sure to reassemble Slider FL drive ❶ after you insert the Boss of Lever FL ARM-R in Groove of Slider Fl drive ❶.

Assembly ; Align the Gear FL Cam ❶ with the Gear worm wheel Post as shown drawing.
(Refer to Timing point)

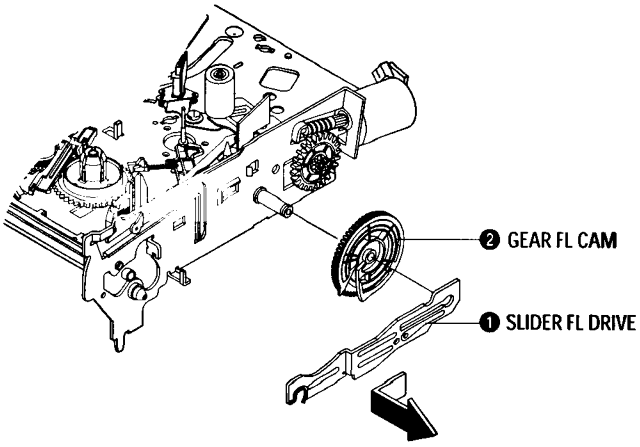

❷ GEAR FL CAM
❶ SLIDER FL DRIVE

Fig. 1-6 Slider FL Drive Removal

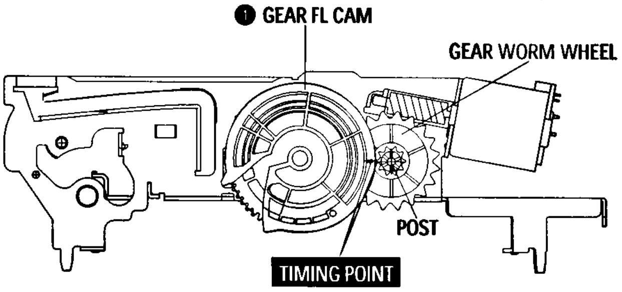

❶ GEAR FL CAM
GEAR WORM WHEEL
POST
TIMING POINT

Fig. 1-7 Gear FL Cam, Gear Worm

1-2-4 Lever FL Arm Ass'y Removal

1) Push the hole "A" in the direction of arrow "B" use the pin.(about Dia.2.5)
2) Pull out the Lever FL Arm Ass'y ❶ from the Boss of Main Base.
3) Remove the Lever FL Arm Ass'y ❶ in the direction of arrow "C".

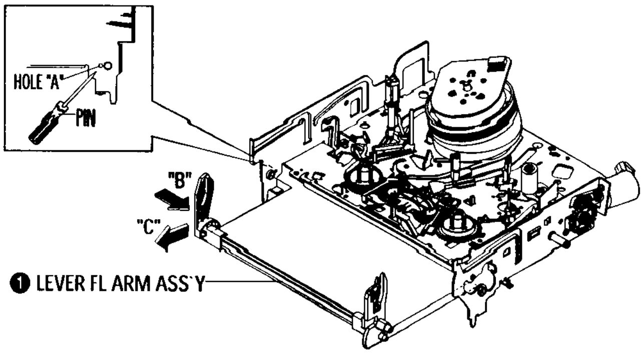

HOLE "A"
PIN
"B"
"C"
❶ LEVER FL ARM ASS'Y

Fig. 1-8 Lever FL Arm Ass'y Removal

1-2-5 Gear Worm Wheel Removal

1) Remove the Gear Worm wheel ❶.

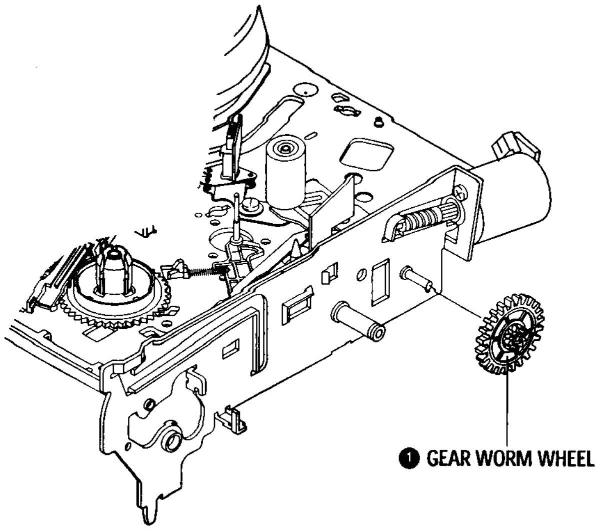

❶ GEAR WORM WHEEL

Fig. 1-9 Gear Worm Wheel Removal

1-2-6 Motor Loading Ass'y Removal

1) Remove the screw ❶.

2) Remove the Motor Loading Ass'y ❷.

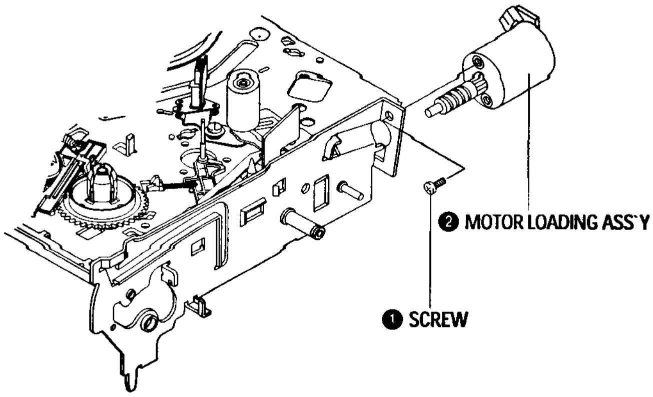

❷ MOTOR LOADING ASS'Y
❶ SCREW

Fig. 1-10 Motor Loading Ass'y Removal

1-2-7 Bracket Gear, Gear Joint 2, 1 Removal

1) Remove the SCREW ❶.
2) Remove the Bracket Gear ❷.
3) Remove the Gear Joint 2 ❸.
4) Remove the Gear Joint 1 ❹.

Assembly :

1) Be sure to align dot mark of Gear Joint 1 ❶ with dot mark of Gear Joint 2 ❷ as shown Fig 1-12. (Refer to Timing point1)
2) Confirm the Timing Point 2 of the Gear Joint 2 ❷ and Slider Cam ❸.

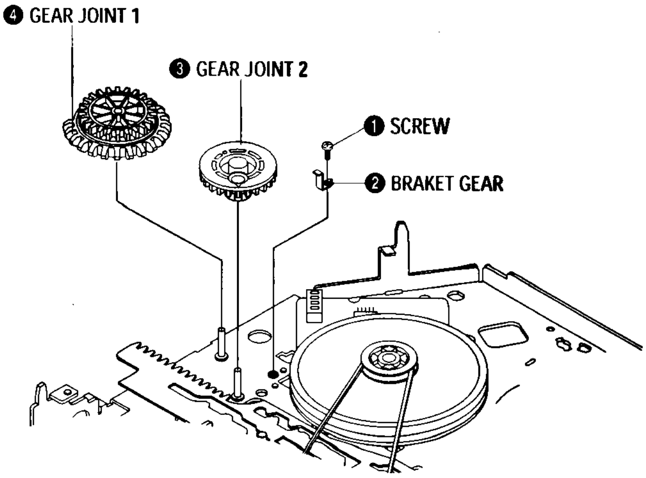

❹ GEAR JOINT 1
❸ GEAR JOINT 2
❶ SCREW
❷ BRAKET GEAR

Fig. 1-11 Bracket Gear, Gear Joint 1,2 Removal

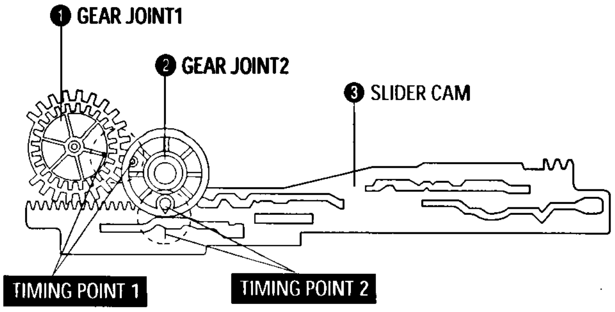

❶ GEAR JOINT1
❷ GEAR JOINT2
❸ SLIDER CAM
TIMING POINT 1
TIMING POINT 2

Fig. 1-12 Gear Joint 1,2 Assembly

1-2-8 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Removal

1) Remove the Belt Pulley. (Refer to Fig. 1-30)
2) Remove the Gear Loading Drive ❶ after releasing Hook [A] in the direction arrow as shown in detail drawing.
3) Remove the Slider Cam ❷.
4) Remove the Lever Load S ❸, Link Load S ❺ & Lever Load T ❹, Link Load T ❻.

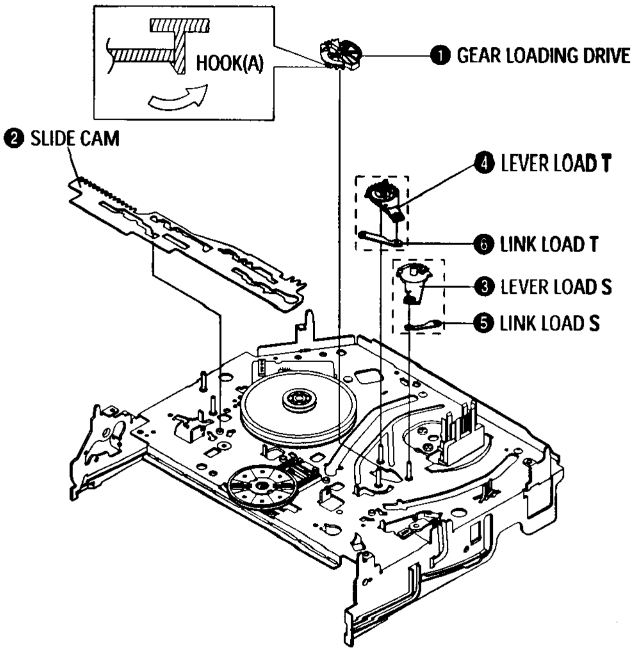

HOOK(A)
❶ GEAR LOADING DRIVE
❷ SLIDE CAM
❹ LEVER LOAD T
❻ LINK LOAD T
❸ LEVER LOAD S
❺ LINK LOAD S

Fig. 1-13 Gear Loading Drive, Slider Cam, Lever T, S Load Ass'y Removal

1-2-9 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Assembly

1) When reinstalling, be sure to align dot of Lever Load T Ass'y ❶ with dot of Lever Load S Ass'y ❷ as shown in drawing, (Refer to Timing Point 1).
2) Insert the Pin A,B,C,D into the Slider Cam ❸ hole.
3) Be sure to align dot of Lever Load T ❶ and dot of Gear Loading Drive ❹, (Refer to Timing Point 2).
4) Aline dot of Gear Loading drive ❹ with mark of Slider Cam ❸ as shown in drawing(Refer to Timing Point 3).

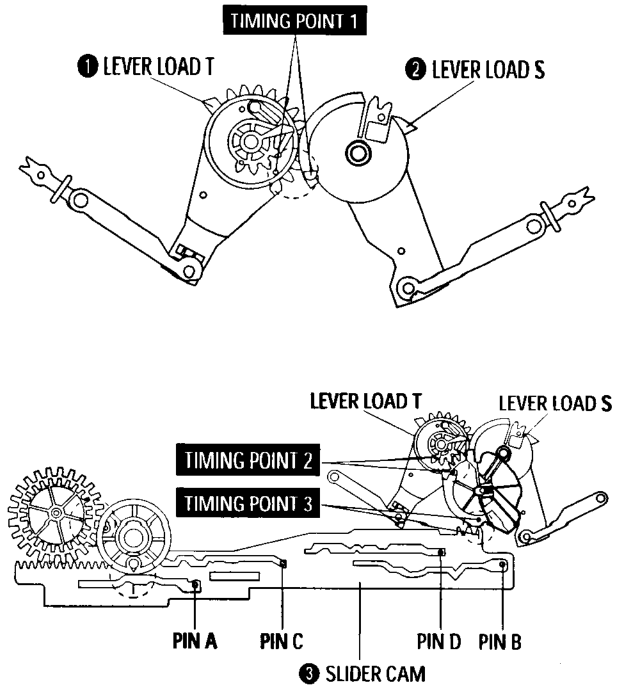

TIMING POINT 1
❶ LEVER LOAD T
❷ LEVER LOAD S
LEVER LOAD T
LEVER LOAD S
TIMING POINT 2
TIMING POINT 3
PIN A
PIN C
PIN D
PIN B
❸ SLIDER CAM

Fig. 1-14 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Assembly

1-2-10 Lever Pinch Drive, Lever Tension Drive Removal

1) Remove the Lever Pinch Drive ❶, Lever Tension Drive ❷.

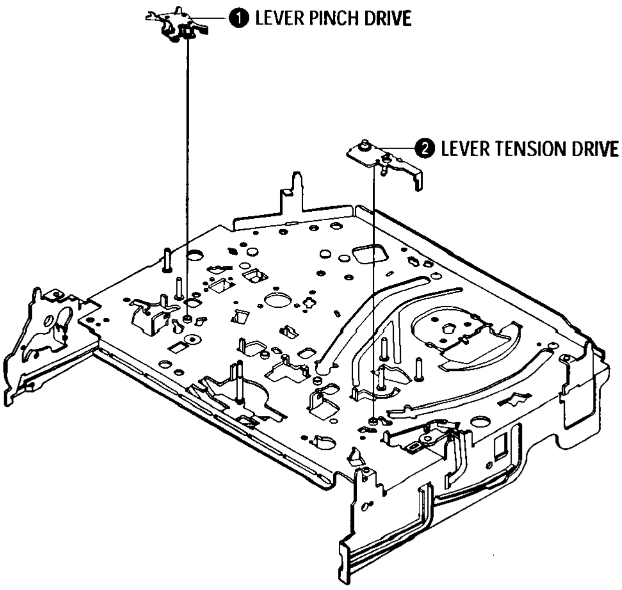

❶ LEVER PINCH DRIVE
❷ LEVER TENSION DRIVE

Fig. 1-15 Lever Pinch Drive, Lever Tension Drive Removal

1-2-11 Lever Tension Ass'y, Band Brake Ass'y Removal

1) Remove the Lever Brake S Ass'y (Refer to Fig 1-17).
2) Remove the Spring Tension Lever ❶.
3) Rotate stopper of Main Base in the direction of arrow "A".
4) Lift the Lever Tension Ass'y ❷ & Band brake Ass'y ❸.

Note :

1) When replacing the Lever Tension Ass'y ❷, be sure to apply Grease on the post,
2) Take care not to touch stain on the felt side, and not to be folder and broken Band brake Ass'y
3) After Lever Tension Ass'y seated, Rotate stopper of Main Base to the Mark[B].

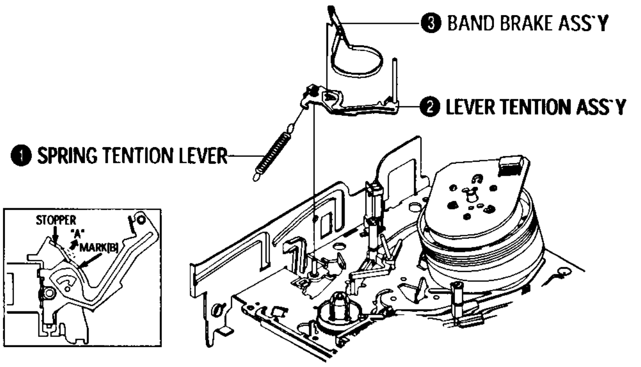

❸ BAND BRAKE ASS'Y
❷ LEVER TENTION ASS'Y
❶ SPRING TENTION LEVER
STOPPER
"A"
MARK[B]

Fig. 1-16 Lever Tension Ass'y, Band Brake Ass'y Removal

1-2-12 Lever Brake S, T Ass'y Removal

1) Release the Hook [A] and the Hook [B], [C] in the direction of arrow as shown in Fig 1-17.
2) Lift the Lever S, T Brake Ass'y ❶, ❷ with spring brake ❸.

Assembly :

1)Assembly the Lever S Brake Ass'y ❶ on the Main Base.

2)Assembly the Lever T Brake Ass'y ❷ with spring brake ❸.

Note : Take extreme care not to be folded and transformed Spring Brake at removing or reinstalling.

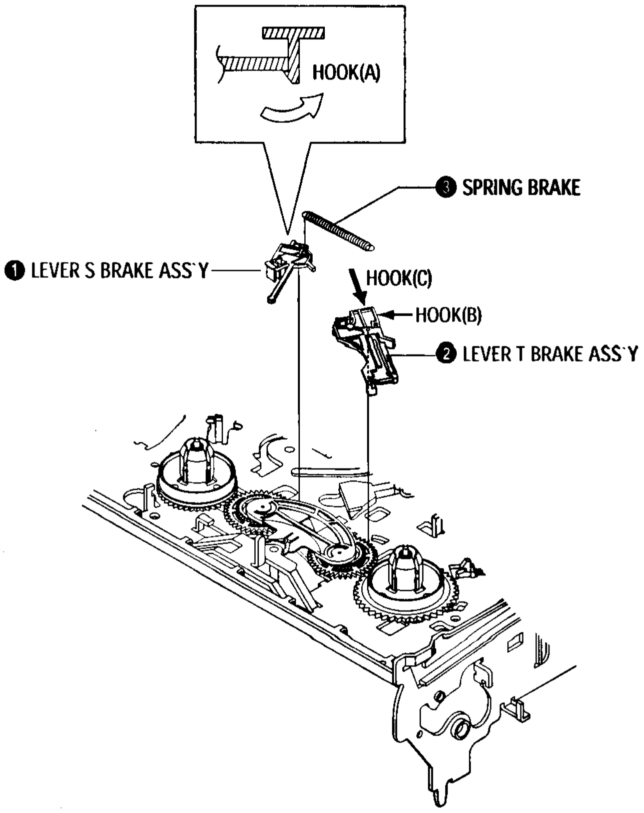

HOOK(A)
❸ SPRING BRAKE
❶ LEVER S BRAKE ASS'Y
HOOK(C)
HOOK(B)
❷ LEVER T BRAKE ASS'Y

Fig. 1-17 Lever Brake S, T Ass'y Removal

1-2-13 Gear Idle Ass'y Removal

1) Push the **Lever Idle** ❶ in the direction of arrow "A", "B".
2) Lift the **Lever** Idle ❶.

Assembly :
1) Apply oil in two Bosses of Lever Idle ❶.
2) Assemble the Gear Idle ❷ with the Lever Idle ❶.

Note : When replacing the Gear Idle ❷, be sure to add oil in the boss of Lever Idle ❶.

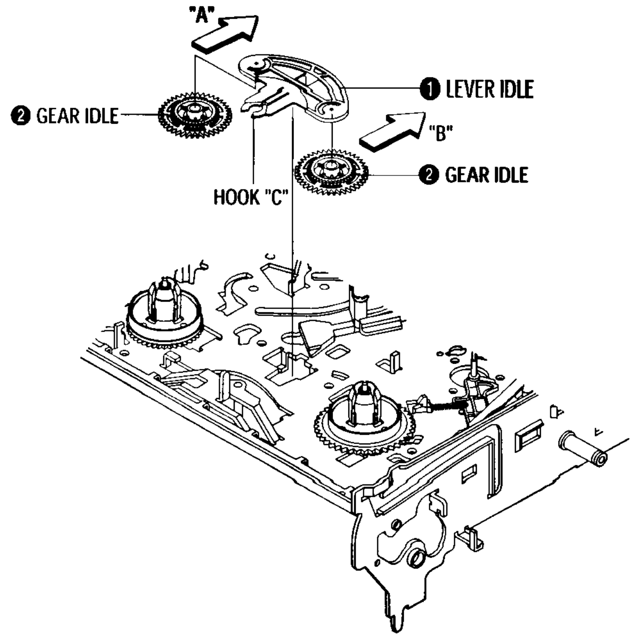

"A"
❶ LEVER IDLE
❷ GEAR IDLE
"B"
❷ GEAR IDLE
HOOK "C"

Fig. 1-18 Gear Idle Ass'y Removal

1-2-14 Disk S, T Reel Removal

1) Lift the Disk S, T Reel ❶, ❷.

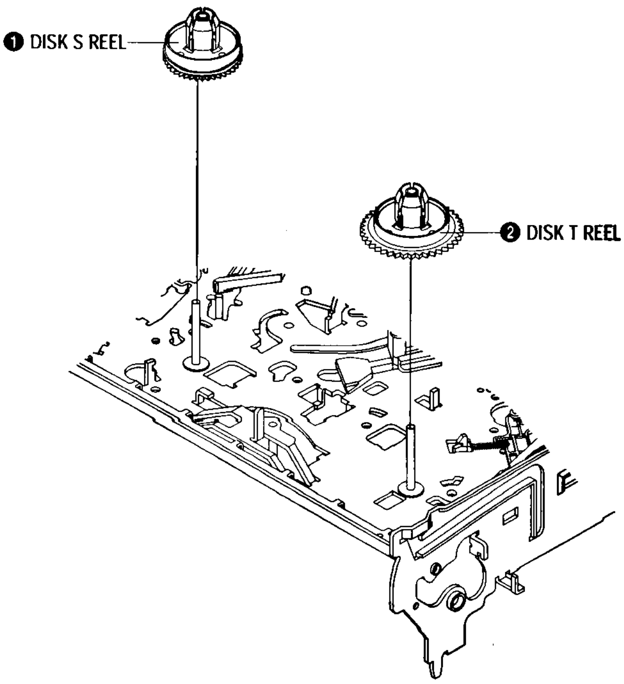

❶ DISK S REEL
❷ DISK T REEL

Fig. 1-19 Disk S, T Reel Removal

1-2-15 Holder Clutch Ass'y Removal

1) Remove the Washer Slit ❶.
2) Lift the Holder Clutch Ass'y ❷.

Note : When you reinstall Holder Clutch Ass'y
1) Check the condition of spring as shown in detail A.
2) Don't push Holder Clutch Ass'y down with excessive force Just insert Holder Clutch Ass'y into post center with dead force and Rotate it smoothly.
   Be sure to confirm that spring is in the slit of Gear Center Ass'y as shown in detail B.

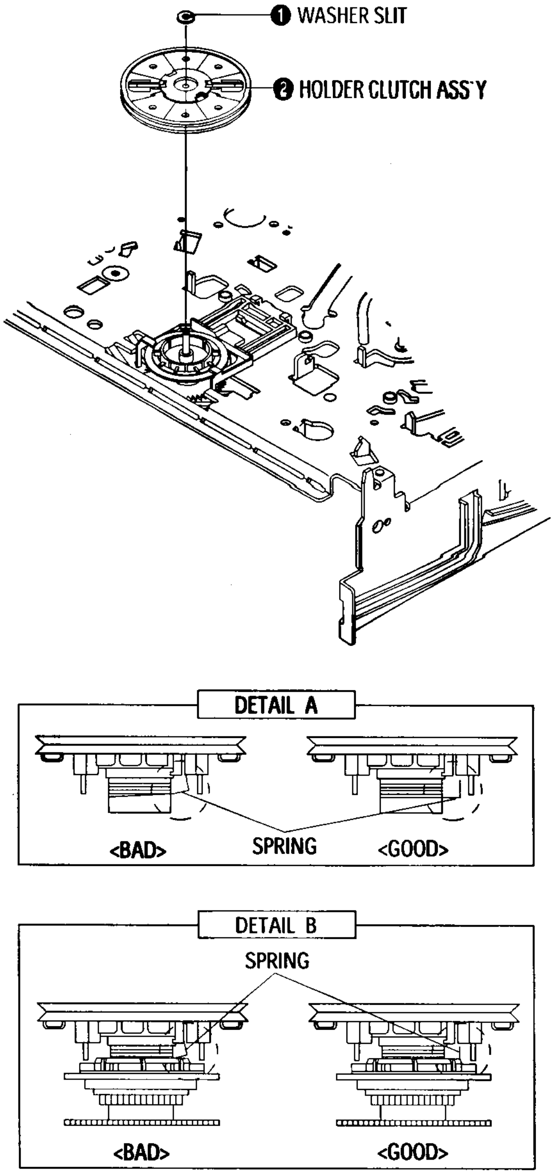

❶ WASHER SLIT
❷ HOLDER CLUTCH ASS'Y
DETAIL A
<BAD>
SPRING
<GOOD>
DETAIL B
SPRING
<BAD>
<GOOD>

Fig. 1-20 Holder Clutch Ass'y Removal

1-2-16 Lever Up Down Ass'y, Gear Center Ass'y Removal

1) Remove the 2 hooks in the direction of arrow as shown Fig. 1-21 and lift the Lever Up Down Ass'y ❶.
2) Lift the Gear Center Ass'y ❷.

Assembly :
1) Insert the Lever Up Down Ass'y ❶ in the rectangular holes on Main Base as shown in Fig 1-22.
2) Lift the Lever Up Down Ass'y ❶ about 35 degree.(Refer to Fig 1-22)
3) Insert Ring of the Gear Center Ass'y ❷ in the Guide of the Lever Up Down Ass'y ❶.
4) Insert the Gear Center Ass'y ❷ in the post on Main Base.
5) Push down the Lever Up Down Ass'y ❶ for locking of the Hook.

Note :
1) Take care not to separate and sentence does not mark sense.
2) Be sure to confirm that Ring of the Gear Center Ass'y ❷ is in the Guide of the Lever Up Down Ass'y ❶ after finishing assembly of Lever Up

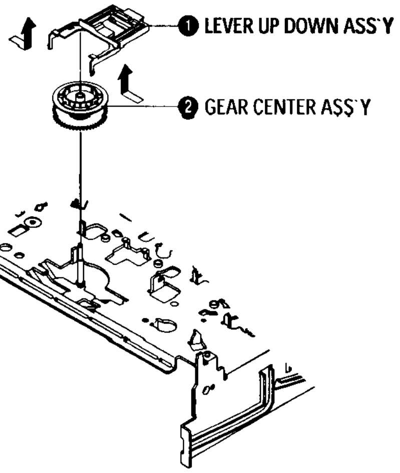

❶ LEVER UP DOWN ASS'Y
❷ GEAR CENTER ASS'Y

Fig. 1-21 Lever Up Down Ass'y Removal

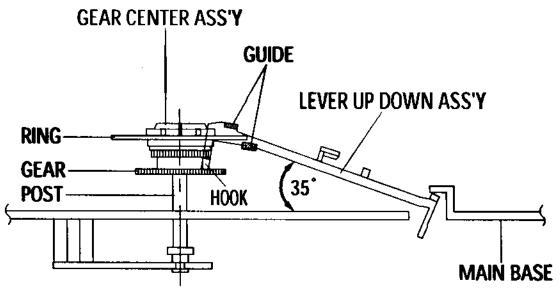

GEAR CENTER ASS'Y
GUIDE
LEVER UP DOWN ASS'Y
RING
GEAR
POST
HOOK
35°
MAIN BASE

Fig. 1-22 Lever Up Down Ass'y Removal

1-2-17 Guide Cassette Door Removal

1) Lift the Hook [A].
2) Rotate the Guide Cassette Door ❶ in the direction of arrow.

Note : After reinstalling the Guide Cassette Door ❶ sure the Hook [A].

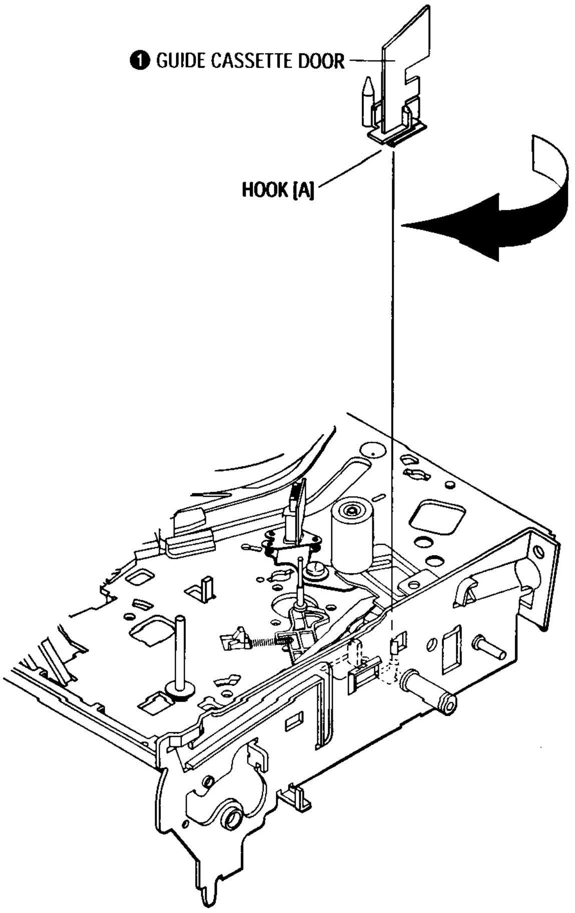

❶ GUIDE CASSETTE DOOR
HOOK [A]

Fig. 1-23 Guide Cassette Door Removal

1-2-18 Lever Unit Pinch Ass'y, Plate Joint, Spring Pinch Drive Removal

1) Lift the Unit Pinch Ass'y ❶.
2) Remove the Plate Joint ❷ from Lever Pinch Drive.
3) Remove the Spring Pinch Drive ❸.

Note :

1) Take extreme care not to touch the grease on the Roller Pinch.
2) When reinstalling, be sure to apply grease on the post pinch roller.

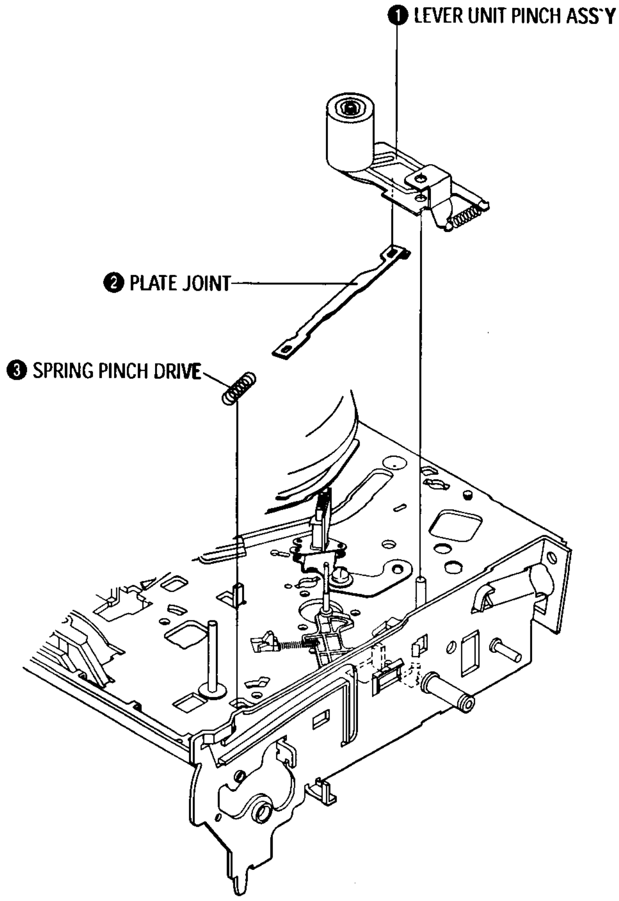

❶ LEVER UNIT PINCH ASS'Y
❷ PLATE JOINT
❸ SPRING PINCH DRIVE

Fig. 1-24 Lever Unit Pinch Ass'y, Plate Joint, Spring Pinch Drive Removal

1-2-19 Lever #9 Guide Ass'y Removal

1) Remove the Spring #9 Guide ❶.
2) Lift the Spring #9 Guide Ass'y ❷ in the direction of arrow "A".

Note :
1) Take extreme **care not to** get grease on the tape Guide Post.
2) After reinstalling, check the bottom side of the Post #9 Guide to the top side of Main Base.

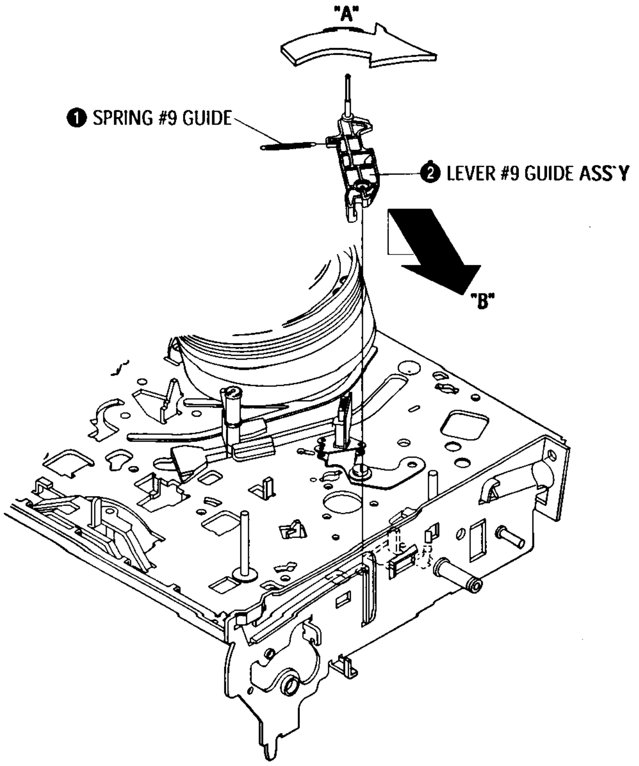

"A"
❶ SPRING #9 GUIDE
❷ LEVER #9 GUIDE ASS'Y
"B"

Fig. 1-25 Lever #9 Guide Ass'y Removal

1-2-20 FE Head Removal

1) Remove the screw ❶.
2) Lift the FE Head ❷.

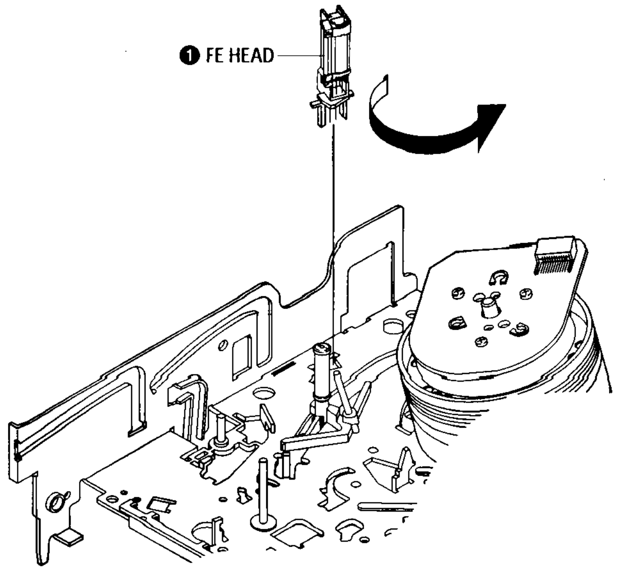


Fig. 1-26 FE Head Removal

1-2-21 ACE Head Removal

1) Pull out the FPC from connector of ACE Head Ass'y ❷.
2) Remove the screw ❶.
3) Lift the ACE Head Ass'y ❷.

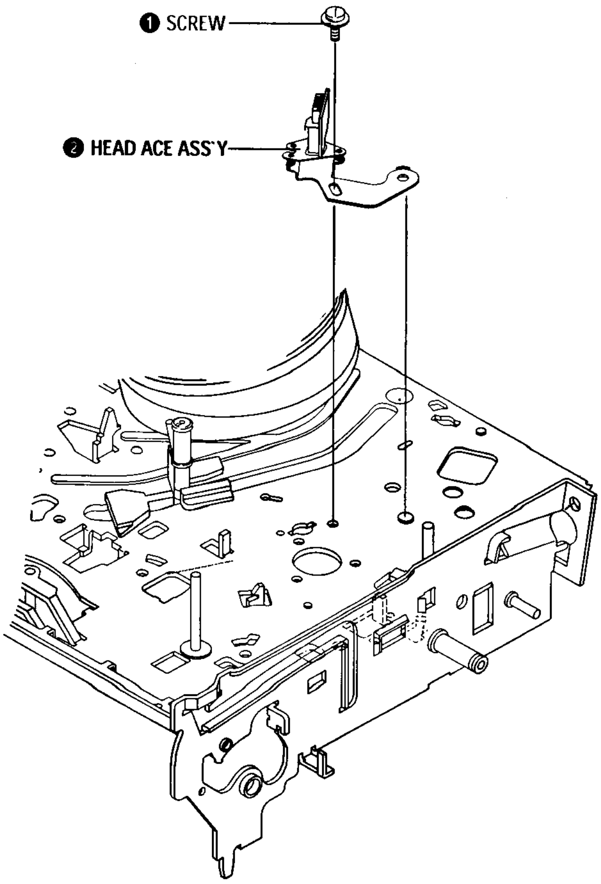

❶ SCREW
❷ HEAD ACE ASS'Y

Fig. 1-27 ACE Head Removal

1-2-22 Slider S, T Ass'y Removal

1) Move the Slider S, T Ass'y ❶, ❷ to slot, and then lift it to remove. (Refer to arrow)

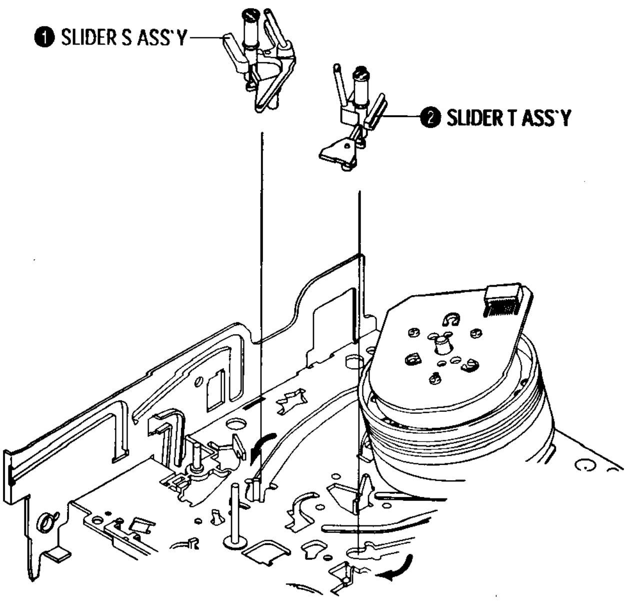

❶ SLIDER S ASS'Y
❷ SLIDER T ASS'Y

Fig. 1-28 Slider S, T Ass'y Removal

1-2-23 Plate Ground Deck, Cylinder Ass'y Removal

1) Remove the 3 Screws ❶.
2) Lift the Plate Ground Deck ❷.
3) Lift the Cylinder Ass'y ❸.

Assembly :

1) Match the 3 holes in the bottom of Cylinder ass'y ❸ to the 3 holes of Main Base as attending not to drop or knock the Cylinder ass'y ❸.
2) Tighten the 1 Screw ❶.
3) Match the Plate Ground Deck ❷ to the Hole of Base Main.
4) Tighten the other 2 Screws ❶.

Note :

1) Take care not to touch the Cylinder Ass'y ❸ and the tape guide post at reinstalling.
2) When reinstalling, Don't push down too much on Screw Driver.

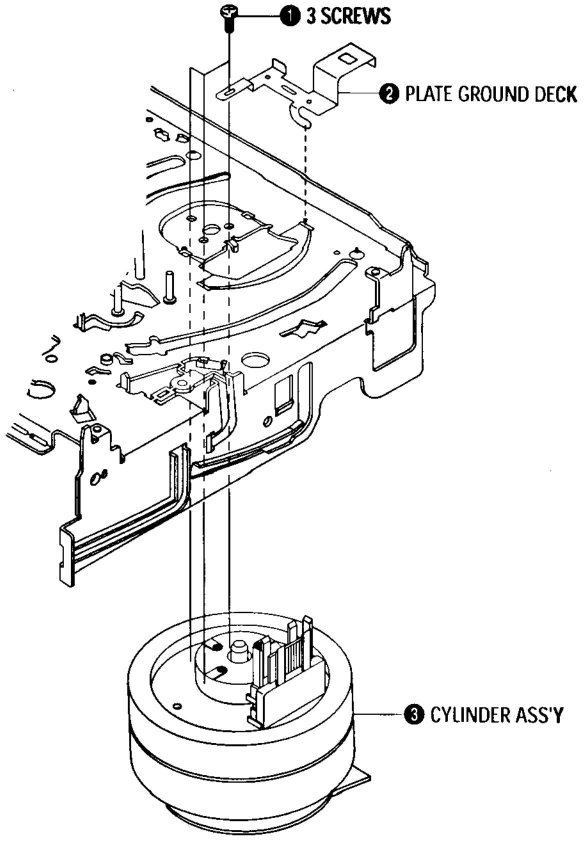

❶ 3 SCREWS
❷ PLATE GROUND DECK
❸ CYLINDER ASS'Y

Fig. 1-29 Plate Ground Deck, Cylinder Ass'y Removal

1-2-24 Belt Pulley Removal

1) Remove the Belt Pulley ❶.

Note : Take extreme care not to get grease on Belt Pulley ❶ at assembling or reassembling.

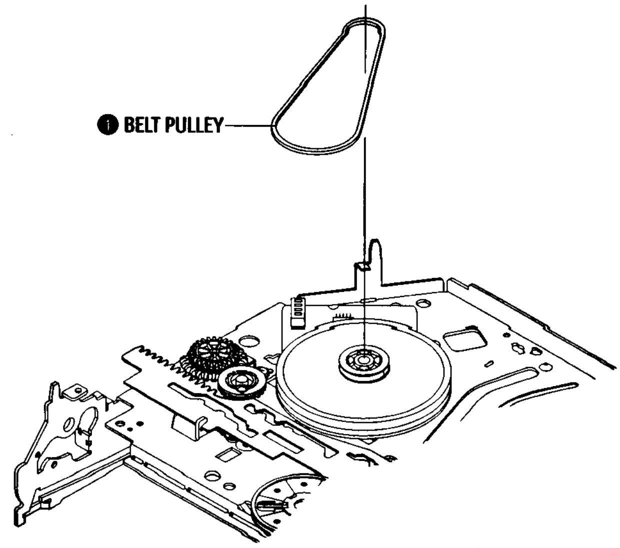

❶ BELT PULLEY

Fig. 1-30 Belt Pulley Removal

1-2-25 Level Head Cleaner Ass'y Removal

1) Release the Hook ❶.
2) Lift the Lever Head Cleaner Ass'y ❷.

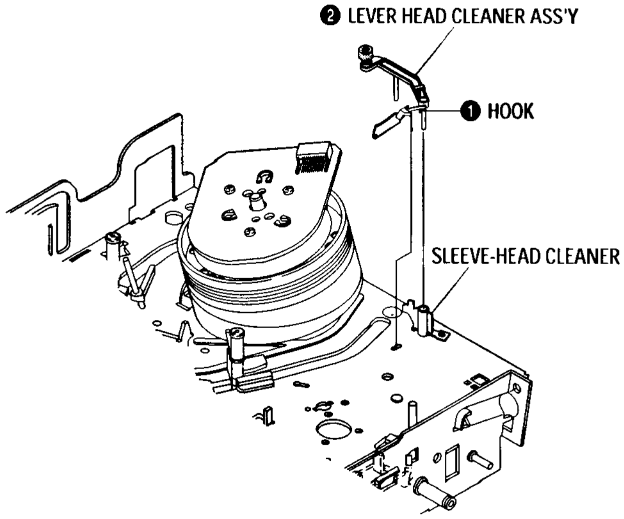

❷ LEVER HEAD CLEANER ASS'Y
❶ HOOK
SLEEVE-HEAD CLEANER

Fig. 1-31 Level Head Cleaner Ass'y Removal

1-2-26 Damper Capstan, Motor Capstan Ass'y Removal

1) Remove the Damper Capstan ❶ in the direction of arrow.
2) Remove the 3 Screws ❷.
3) Remove the Motor Capstan Ass'y ❸.

Assembly :
1) Match the 3 holes of Motor Capstan Ass'y ❸ to the 3 holes of Main Base. Be careful not to drop or knock the Motor Capstan Ass'y ❸.
2) Tighten the 3 Screws ❷ in the direction of arrow as shown detail drawing.
3) Assemble the Damper Capstan ❶.

Note : After tightening screws, check if there is gap between the head of screws and the top side of Main Base. There should have no gap between the head of screws and the top side of Main Base.
After reinstalling, adjusting the tape transport system again.

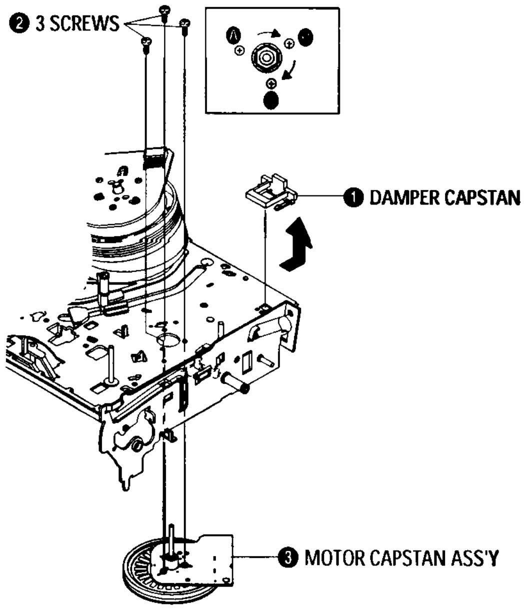


Fig. 1-32 Damper Capstan,Motor Capstan Ass'y Removal

1-2-27 How to Eject the Cassette Tape (If the unit does not operate on condition that is inserted into housing ass'y)

1) Turn the Gear worm ❶ clockwise with screw driver. (Refer to arrow)
(Other method : Remove the Screw of Motor Load Ass'y, Separate the Motor Load Ass'y)

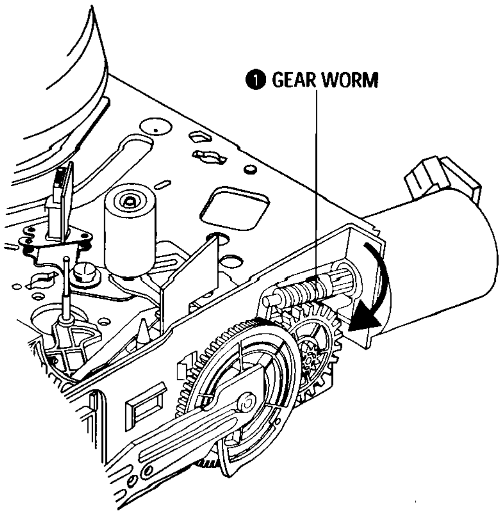


Fig. 1-33

2) When Slider S,T are approched in the position of unloading, rotate holder Clutch counterclockwise after inserting screw driver in the hole of frame's bottom in order to wind the unwinded tape. (Refer to Fig.1-34)
(If you rotate Gear Worm ❶ continuously when tape is in state of unwinding, you may cause a tape contamination by grease and tape damage. Be sure to wind the unwinded tape in the state of set horizently.)
3) Rotate Gear Worm ❶ clockwise using screw driver again up to the state of eject mode and then pick out the tape.(Refer to Fig.1-33)

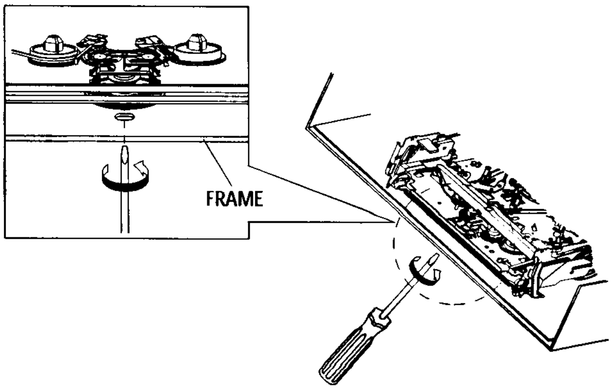


Fig. 1-34

1-3 The table of clearing, Lubrication and replacement time about principal parts

1) The replacement time of parts is not life of parts.
2) The table 1-1 is that the VCR Set is in normal condition (normal temperature, normal humidity).
The checking period may be changed owing to the condition of use, runtime and environmental conditions.
3) Life of the Cylinder Ass'y is depend on the condition of use.
4) See exploded view for location of each parts.

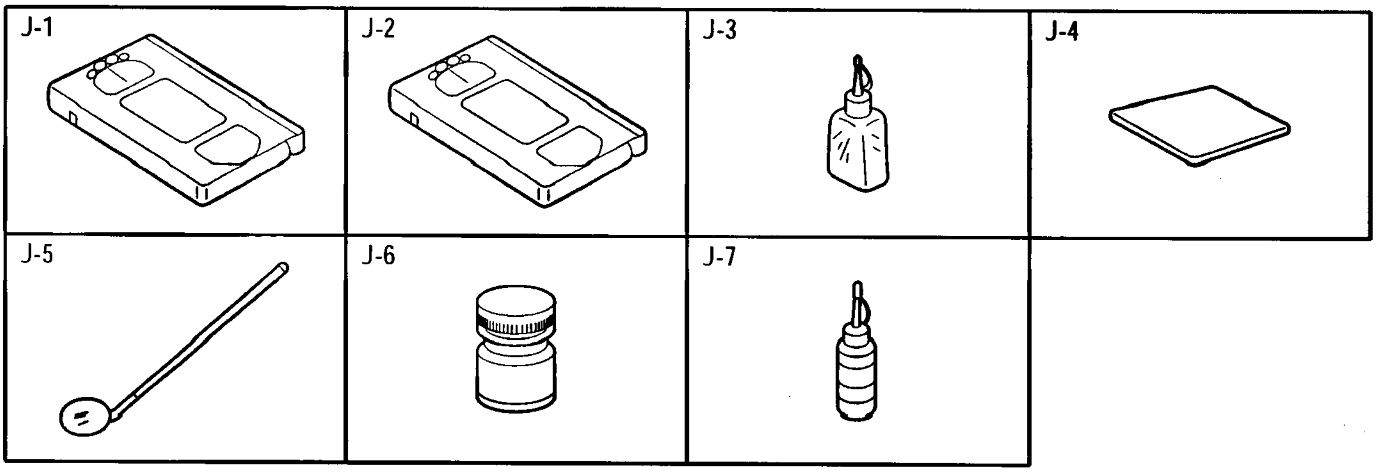
<Table 1-1>

*	Parts Name	Checking Period										Remark
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
TAPE PATH SYSTEM	POST TENSION	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	- To clean the parts, use patch and alcohol (solvent). - After cleaning, use the video tape after alcohol is gone away completely. - We recommend to use oil [NT-68] or solvent. - One or two drops of oil should be applied after cleaning with alcohol.
	SLANT POST S, T	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	#8 GUIDE SHAFT	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	CAPSTAN SHAFT	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	#9 GUIDE POST	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	#3 GUIDE POST	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	GUIDE ROLLER S, T	Δ	Δ	Δ	0	0	0	0	0	0	0	
	CYLINDER ASS'Y	Δ	0	0	0	0	0	0	0	0	0	
	FE HEAD	Δ	Δ	Δ	0	0	0	0	0	0	0	
	ACE HEAD	Δ	0	0	0	0	0	0	0	0	0	
	PINCH ROLLER	Δ	0	0	0	0	0	0	0	0	0	
	POST REEL S, T		◆		◆		◆		◆		◆	- Periodic time of applying oil (Apply oil after cleaning) - The excessive applying oil may be the cause of malfunction.
	SLEEVE TENSION		◆		◆		◆		◆		◆	
	POST CENTER		◆		◆		◆		◆		◆	
	LEVER IDLE BOSS (2Point)		◆		◆		◆		◆		◆	
DRIVING SYSTEM	CAPSTAN MOTOR PULLEY	Δ	Δ	Δ	Δ	Δ	0	0	0	0	0	
	BELT PULLEY				0	0	0	0	0	0	0	
	HOLDER CLUTCH ASS'Y	Δ	0	0	0	0	0	0	0	0	0	
	GEAR CENTER ASS'Y		0	0	0	0	0	0	0	0	0	
	GEAR IDLE (2Point)		0	0	0	0	0	0	0	0	0	
	LOADING MOTOR		0	0	0	0	0	0	0	0	0	
BRAKE SYSTEM	BAND BRAKE ASS'Y		0	0	0	0	0	0	0	0	0	
	BRAKE T ASS'Y		0	0	0	0	0	0	0	0	0	

Δ : Cleaning　　O : Check and replacement in necessary　　◆ : Add Oil

1-4 Tools and fixtures reguired for service

Ref. No.	Name		Part No.	Caved Jig No.	Remarks
J-1	Torque Measurement Cassette VHT-103S		J-6090-072-A		For FWD & back tension torque measurement
	Torque Measurement Cassette VHT-404S		J-6082-012-A		For CUE and REVIEW torque measurement
J-2	Alignment Tape	KRV-52NE (NTSC)	8-192-605-41		Tape path, Audio azimuth, X-value adjustments
		KRV-51N2 (NTSC)	8-192-605-32		Electrical adjustments, Operation check
		KRV-52PL (PAL)	8-192-605-46		Tape path, Audio azimuth, X-value adjustments
		KRV-51P (PAL)	8-192-605-36		Electrical adjustments, Operation check
J-3	Cleaning Fluid		Y-2031-001-0	—	
J-4	Chamois Leather		2-034-697-00	—	
J-5	Dental Mirror (with Handle)		J-6080-029-A	SL-5052	Tape path and tape traveling adjustments or checks
	Dental Mirror (Mirror)		J-6080-030-1		
J-6	Grease Molykote EM 30LG		J-6090-014-A		Net. 20 g
J-6	Diamond Oil NT-68		7-661-018-18		



<Fig 1-35>

2. Alignment and Adjustment

2-1 Tape Transport System and Adjustment Locations

The tape transport system has been adjusted precisely in the factory. Alignment is not necessary except for the following :

1) Noise observed on the screen.
2) Tape damage.
3) Parts replacement in the tape transport system.

Lower flange height of tape guide is used as the reference for the transport adjustment.
To maintain the height of the tape guide and prevent damage, do not apply excessive force onto the main base.

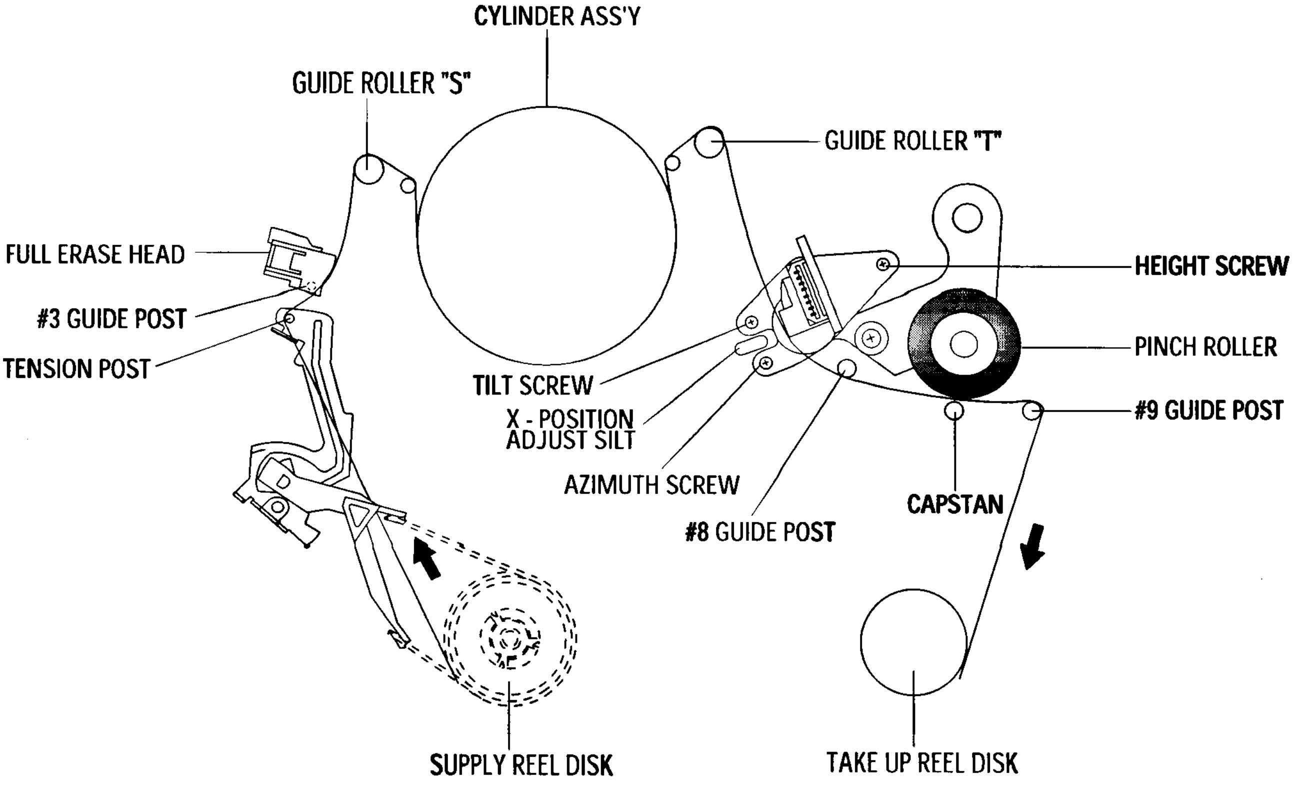

CYLINDER ASS'Y
GUIDE ROLLER "S"
GUIDE ROLLER "T"
FULL ERASE HEAD
HEIGHT SCREW
#3 GUIDE POST
TENSION POST
PINCH ROLLER
#9 GUIDE POST
TILT SCREW
X - POSITION ADJUST SILT
AZIMUTH SCREW
CAPSTAN
#8 GUIDE POST
SUPPLY REEL DISK
TAKE UP REEL DISK

Fig. 2-1 Location of Tape Transport Adjustment

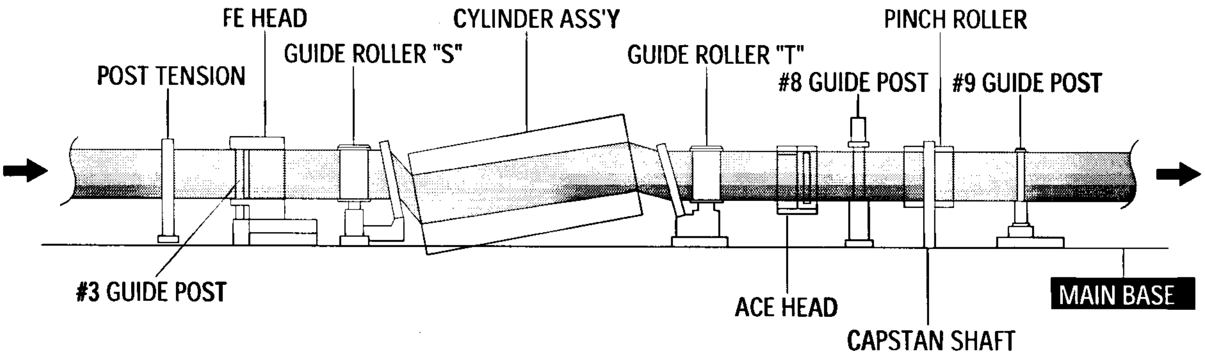

FE HEAD
CYLINDER ASS'Y
PINCH ROLLER
GUIDE ROLLER "S"
GUIDE ROLLER "T"
POST TENSION
#8 GUIDE POST
#9 GUIDE POST
#3 GUIDE POST
ACE HEAD
MAIN BASE
CAPSTAN SHAFT

Fig. 2-2 Tape Travel Diagram

2-2 Tape Transport System Adjustment

When parts are replaced, perform the required adjustments by referring to procedures for the tape transport system. If there are any changes to the tape path, first run a T-120 tape and make sure excessive tape wrinkle does not occur at the tape guides.

1) If tape wrinkle is observed at the guide roller S, T, turn the guide roller S, T until wrinkle disappears.
2) If the tape wrinkle is still observed at the tape guide, perform the tilt adjustment of the ACE head. (See page 5-3 of the Service Manual for Test Point Locations.)

2-2-1 ACE Head Assembly Adjustment

2-2-1(a) ACE HEAD HEIGHT ADJUSTMENT

1) Run the alignment tape (KRV-52NE (NTSC)/52PL (PAL)) in the playback mode.
2) Observe surface of the audio head using a dental mirror.
3) Turn screw (C) clockwise or counterclockwise until the gap of lower tape edge and the lower edge of the control head is about 0.25mm. (Refer to Fig. 2-3 and 2-4)

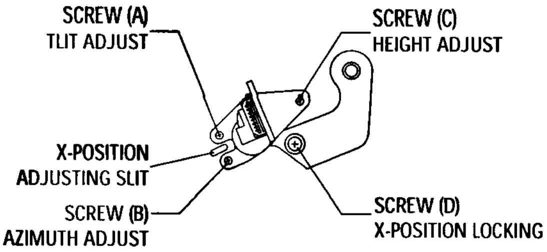


Fig. 2-3 Location of ACE Head Adjustment Screw

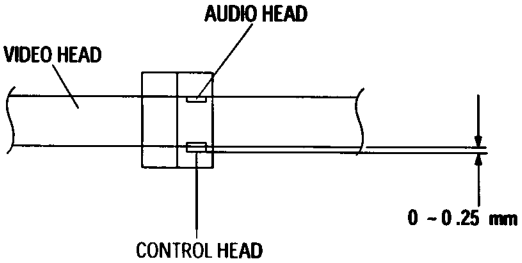


Fig. 2-4 ACE Head Height Adjustment

2-2-1(b) ACE HEAD TILT ADJUSTMENT

1) Playback a blank tape and observe the position of the tape at the lower flange of tape guide.
2) Confirm that there is no curl or wrinkle at the lower flange of tape guide as shown in Fig. 2-5 (B).
3) If a curl or wrinkle of the tape occurs, slightly turn the screw (A) tilt adjust on the ACE head ass'y.
4) Reconfirm the ACE head height.

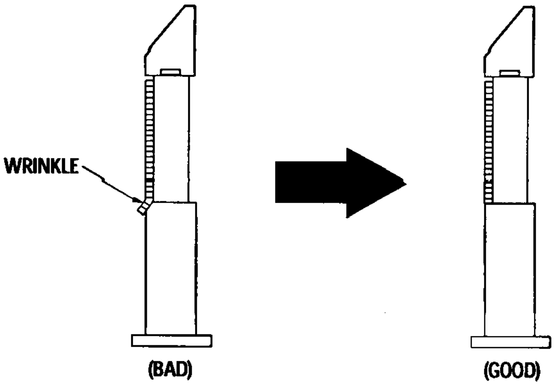


Fig. 2-5 Tape Guide Check

2-2-1(c) AUDIO AZIMUTH ADJUSTMENT

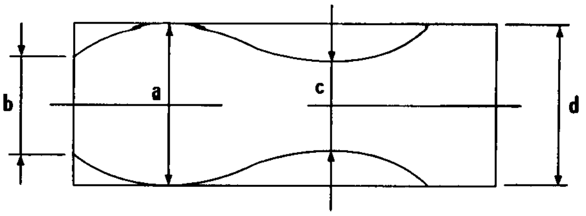
1) Load alignment tape (KRV-52NE (NTSC)/52PL (PAL)) and playback the NTSC : 5KHz (PAL : 4KHz) signal.
2) Connect channel-1 scope probe to audio output test point.
3) Adjust screw (B) to achieve maximum audio level. (See Fig. 2-3)

2-2-1(d) ACE HEAD POSITION (X-POINT) ADJUSTMENT

1) See "2. Alignment and Adjustment" for ACE Head position (X-Point) adjustment.

2-2-2 Linearity Adjustment (Guide roller S, T adjustment)

1) Playback the alignment tape (KRV-51N2 (NTSC)/51P (PAL)) (SP mode, Mono Scope).
2) Observe the video envelope signal on an oscilloscope (triggered by the video switching pulse).
3) Make sure the video envelope waveform (at its minimum) meets the specification shown in Fig. 2-6.
If it does not, adjust as follows :



a b c d
c,b,d/a ≧63%

Fig. 2-6 Envelope Waveform Adjustment

Note :
a=Maximum output of the video RF envelope.
b=Minimum output of the video RF envelope at the entrance side.
c=Minimum output of the video RF envelope at the center point.
d=Maximum output of the video RF envelope at the exit side.

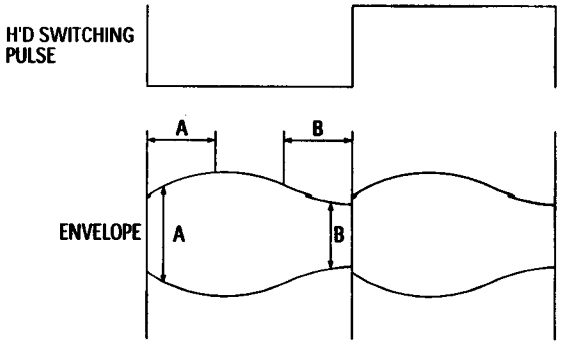

H'D SWITCHING PULSE
A
B
ENVELOPE
A
B

Fig. 2-7 Adjustment Points

4) If the section A in Fig. 2-7 does not meet the specification, adjust the guide roller S up or down.
5) If the section B in Fig. 2-7 does not meet the specification, adjust the guide roller T up or down.
6) Play back the alignment tape (SP mode, Mono Scope).
7) Connect an oscilloscope CH-1 to the Envelope and CH-2 to the H'D SW Pulse for triggering.
8) Turn the guide roller heads with a flat head (▬) driver to obtain a flat video RF envelope as shown in Fig. 2-8.

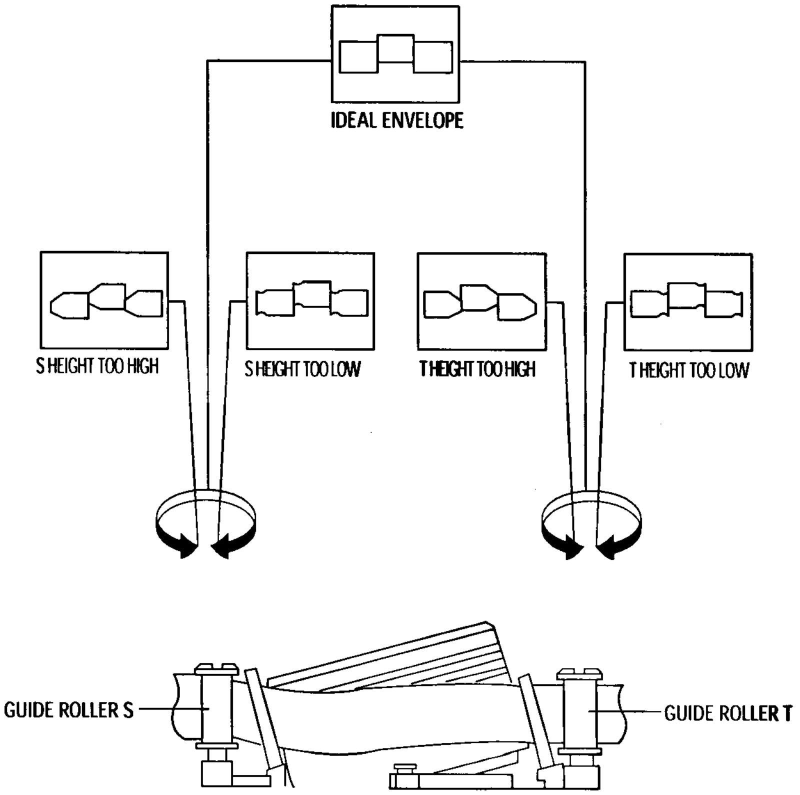

IDEAL ENVELOPE
S HEIGHT TOO HIGH
S HEIGHT TOO LOW
T HEIGHT TOO HIGH
T HEIGHT TOO LOW
GUIDE ROLLER S
GUIDE ROLLER T

Fig. 2-8 Guide Roller S, T Height Adjustment

2-2-3 Check Transitional Operation from RPS to Play

Check transition from RPS mode to play mode :
Using a pre-recorded SP tape, make sure the entry side of envelope comes to an appropriate steady state within 3 seconds (as shown in Fig. 2-9).
If the envelope waveform does not reach specified peak-to peak amplitude within 3 seconds, adjust as follows :

1) Make sure there is no gap between the supply roller lower flange and the tape.
   If there is a gap, adjust the supply guide roller again.
2) Change operation mode from the RPS to the play mode (again) and make sure the entry side of envelope rises within 3 second.

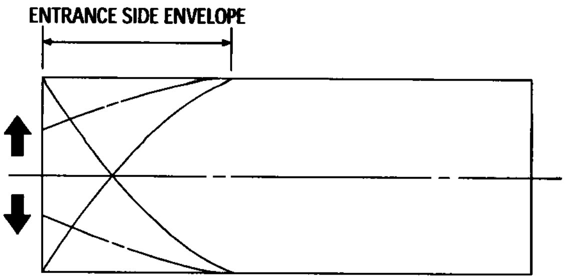


Fig. 2-9 Video Envelope Rising when Operation mode Changes from RPS to Play Mode

2-2-4 Envelope Check

1) Make recordings on T-120 (E-120) and T-160 (E-180) tape.
   Make sure the playback output envelope meets the specification as shown in Fig. 2-10.
2) Play back a self recorded tape (recording made on the unit using with T-120 (E-120).
   The video envelope should meet the specification as shown in Fig. 2-10.
   In SP mode, (A) should equal (B).
   If the head gap is wide, upper cylinder should be checked.

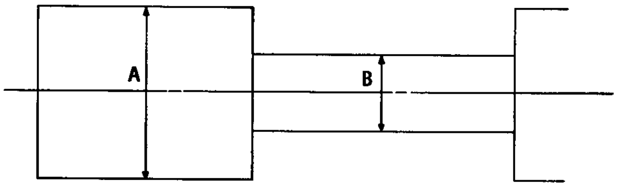


Fig. 2-10 Envelope Output and Output Level

2-2-5 Tape Wrinkle Check

1) Run the T-160 (E-180) tape in the playback, FPS, RPS and Pause modes and observe tape wrinkle at each guide.
2) If excessive tape wrinkle is observed, perform the following adjustments in Playback mode :

- ◆ Tape wrinkle at the guide roller S, T section :
  Linearity adjustment.
- ◆ Tape wrinkle at tape guide flange :
  ACE head assembly coarse adjustment.

2-3 Reel Torque

1) The rotation of the capstan motor causes the Holder Clutch Ass'y to rotate through the Belt Pulley.
2) The spring wrap PLAY/REV of holder clutch ass'y drives the disk reel S, T through gear idle by rotation of gear center ass'y.
3) Brake is operated by slider cam at FF/REW mode.
4) Transportation of accurate driving force is done by gears. (Gear Center Ass'y)

Note : If the spec. does not meet the followings specifications, replace the holder clutch ass'y and then recheck.

<Table 2-1>

MODE	TORQUE g/cm	GAUGE
PB	42 ± 11	Cassette Torquemeter
RPS	145 ± 30	Cassette Torquemeter